JULY 1926 — № 246

Monthly

A Reference for Buyers

HITCHCOCK'S MACHINE TOOL BLUE BOOK

25,000
Controlled Circulation

Published By
HITCHCOCK PUBLISHING CO.
508 So. DEARBORN ST.
CHICAGO

We build both alternating and direct current motors with ball bearings, roller bearings or sleeve bearings.

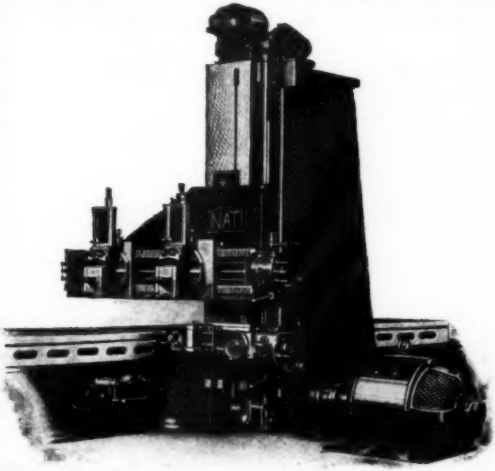
Reliance Electric & Engineering Co.
1050 Ivanhoe Road, Cleveland, Ohio

Branches:

Boston New York Philadelphia Pittsburgh
Cincinnati Detroit Chicago Birmingham, Ala.

We specialize in motors, sizes 1/2 to 250 h. p. constant and adjustable speed D. C.; squirrel cage and slip ring A. C.

CINCINNATI HYPRO OPEN SIDE



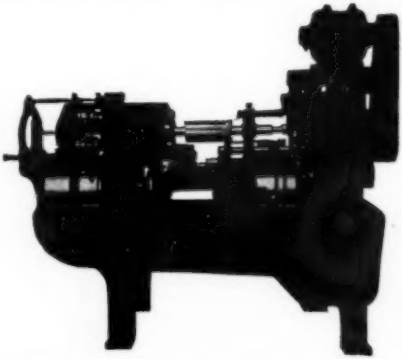
High Production Features:

Selective Dial Feed
Rail Clamping Device
Instantaneous Rail Lift
Rapid Power Traverse
Forced Lubrication
Combination Steel
Herringbone and Spur Gear Drive
Long Inverted Dovetail Down-Slide

The Cincinnati Planer Co.

Cincinnati, Ohio

Have You a Copy of the Model C Acme Bulletin?



The Model C Acme is a five spindle automatic screw machine that has already proved itself to be a machine that will show big savings in the cost of bar stock parts by producing more and better parts at a lower labor cost.

Get all the facts on this machine. Ask for the Model C Acme Bulletin—it's free.

Write Dept. C. S.

The National Acme Co.

Cleveland, Ohio

New York Detroit Chicago

Automatic Stock Feed Marvel High Speed Saw

Capacity 6 x 6 in.

Its Output Equals that of 8 Ordinary Hack Saws

The Marvel No. 5

This saw is entirely automatic and cuts off and piles up the duplicate pieces so fast it soon pays for itself in the saving of time, labor and blades. Don't let this opportunity pass of getting our catalog. Write us about your cutting problems.

Marvel Hack Saws for all needs. Write for Catalog

Armstrong-Blum Mfg. Co.

341 N. Francisco Ave., Chicago, Ill.

Rhodes Shaper & Slotter

Unexcelled for Small Work

7 in. Shaper Stroke

3½ in. Slotter Stroke

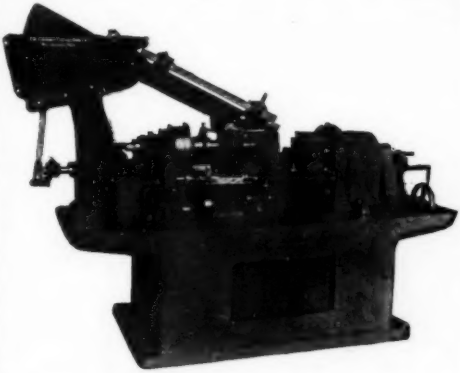
A sledge hammer is all right for driving spikes, but there's nothing better than a carpenter's hammer for all-around usefulness. Nor does its smaller size reduce its quality.

Use a large shaper where the work requires it, but there's nothing so satisfactory as the "Rhodes" for all-around shaping and slotting within its capacity. It is handier, easier to manipulate, more economical, strictly high-grade and thoroughly accurate.

Ask your dealer or write for
CATALOG H22

The Rhodes Mfg. Company
984 Park Road, -:- Hartford, Conn.

SHAPERS — RHODES — SLOTTERS



"This is Production"

2800 Pointed and Threaded ½" Bolts Per Hour— One Operator!

WHEN USING

Four Economy Automatic Combined Pointing and Threading Machines.

Capacity ¼"x1" to ¾"x5½" Bolt and Cap Screws.

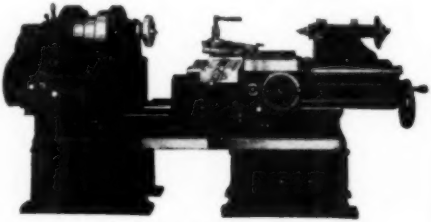
The Economy Engineering Company

WILLOUGHBY, OHIO

Rahn-Larmon 18"/36"

Extension Bed Gap Lathe

Also Made in Sizes 22"/40" and 28"/50"



The Ideal Lathe for Railroad and Jobbing Shops

Here is a lathe of the widest range, yet so sturdy in construction that it absorbs the vibrations of the heaviest cuts.

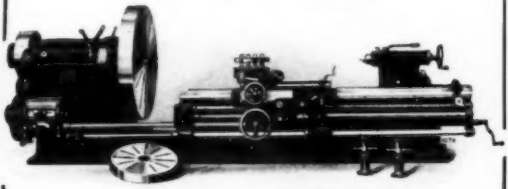
There is hardly a reasonable limit to the work it will do. It is always ready for practically any job, without tearing down or setting up.

It saves in investment cost, it saves in time and labor cost, and it increases output—a most unusual combination. And it enables the operator to have at all times a lathe ready for 'most any job that comes into the shop.

Get in touch with us. Find out what this lathe will do for you and how it saves costs. Glad to go into the matter with you fully, without obligating you in any way.

The Rahn-Larmon Co.
CINCINNATI, OHIO

LeBLOND SLIDING BED GAP LATHES



Designed to meet the requirements for a heavy duty universal lathe of adjustable capacity. The bed is of compound form, in two sections, the upper section being slidable along the lower section, providing an increased swing over the gap and any necessary distance between centers.

Built in three sizes with cone driven or geared headstock, described in detail in our literature.

THE R. K. LeBLOND MACHINE TOOL COMPANY

CINCINNATI, OHIO

Cutter and Tool Grinders

For All Classes of Work

No. 12
Cutter and Tool
Grinder

The Nos. 10, 11 and 12 give a range of sizes that will take care of any kind of cutter and tool work as well as light cylindrical grinding.

Let us recommend the proper sizes for your work

LANDIS TOOL COMPANY

Waynesboro, Pa.

New York Office: 30 Church Street Detroit Office: 5928 Second Blvd.
Chicago Office: 618 W. Washington Blvd.

The "Hole" Question And Sharp Drills

Motor Driven

Capacity No. 52 to 3/4" Drills

Style A-7-T Grand Rapids Drill Grinder

The Drill Grinder illustrated above is of the bench type, but can be furnished with floor column. It may be operated from a lighting circuit.

Like all Grand Rapids Drill Grinders, it is scientifically designed to both *sharpen* and *shape* the cutting edges in a way that insures the cutting capacity of which the drills are capable.

Given any particular drilling outfit, and if the drills are sharpened on a Grand Rapids Drill Grinder they can be counted on to do their part in producing the maximum amount of accurate work.

Write for the Drill Grinder Book

It tells the "how" and "why" of it

Gallmeyer & Livingston Co.

342 Straight Ave., S. W., Grand Rapids, Mich.

Manufacturers of Grand Rapids Drill Grinders, Cutter and Tool Grinders and Tap Grinders. What do you need?

A Single Spindle Footburt Sipp Sensitive Drill

Made in three sizes of single and multiple spindle models

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

It pays to get the best

Designed for performance, not built to meet a price, **Avey Drilling Machines** combine every known refinement in design, materials and workmanship.

These sensitive, high-speed, all-ball-bearing machines—1 to 6 spindles, 1,500 to 12,000 r. p. m.—cut cost of drilling operations enormously due to rapid, accurate work; low power and upkeep costs; minimum drill cost and floor space requirements.

20 types and sizes

The Avey Drilling Machine Co., Cincinnati, O.

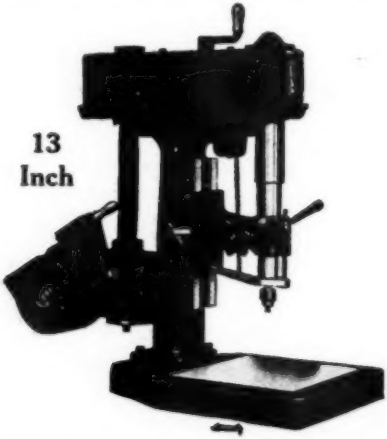
Representatives in principal cities

Get the Avey drilling book

Fosdick Superspeed Sensitive

A Modern Machine that Lowers Costs

13
Inch



OLD TUBS do not win races, and other things being equal, the shop equipped with the fastest machines will win out in the race for larger profits. These ball bearing machines are of the very latest design and are built for superspeed production in accordance with the most modern drilling practice. They are patented.

Speed changes are made quickly and easily. The feed lever is adjustable to various position for covenience of operation. On the opposite side is the ***quick return star wheel,*** a simple improvement which enables the operator to feed, return or position the drill rapidly with either hand.

Built in combinations of 1 to 6 spindles. Capacity 0 to ⅜" drills. ***Write for the interesting illustrated Catalog today.***

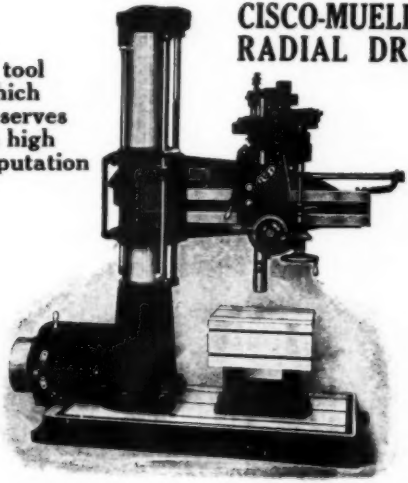
The Fosdick Machine Tool Co.

1638 Blue Rock St., Cincinnati, Ohio

The Cisco Machine Tool Co. has recently purchased the Mueller Machine Tool Co., and will continue to make their well known line of Radial Drills and furnish repairs

CISCO-MUELLER RADIAL DRILL

A tool which deserves its high reputation



A Few Features of the CISCO-MUELLER Radial

Patented stationary column.
Combination positive and friction feed.
Effective, yet extremely simple control.
Unusual rigidity, insuring accurate work.
Combination low and high speed reverse for backing out taps, etc., etc.

The price is right, too. May we describe and quote?

The Cisco Machine Tool Co.

1700 Elmore Street, Cincinnati, Ohio

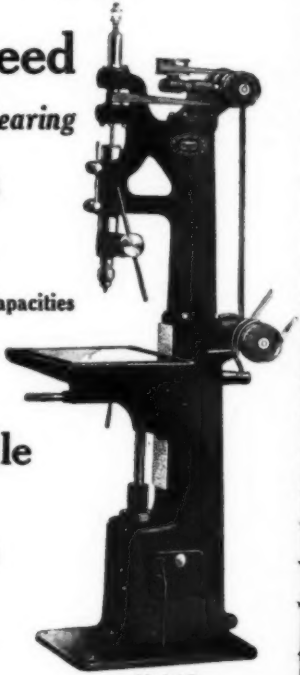
Demco Drills

High Speed

Sensitive Ball Bearing

Drills

1 to 6 Spindles
8 in. overhang
3/16, ⅜, ⅝, ⅞-in. Capacities



The Drill Spindle *without* Vibration

Write for information

Model D—
1 Spindle Floor Type

Merit Oil Equipment Co.

Main Office and Factory:
6616 Morgan Ave., Cleveland, Ohio

Don't Forget—

Wood, Fibre, Rubber, Paper, Mica, Bakerlite

as well as the ordinary metals can be drilled to advantage on the

Leland-Gifford Super-High-Speed Ball Bearing Drilling Machine

Spindle Speeds Up to 10,000 R. P. M.

Write us about this Drill to speed up your drilling operations.

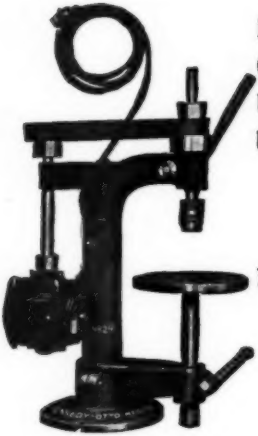
Ask for Bulletin No. 502

Leland-Gifford Co.

Worcester, Mass., U. S. A.

BRANCH OFFICES:

Boston, Chicago, New York
Cleveland, Detroit, Rochester



Drills to the center of a 10" circle.

Capacity, 3/8" diameter.

Up and down run of spindle, 2½".

Up and down run of table, 7".

$44.00

110 volt, 60 cycle, single phase.
Other voltages on application.

Ready for the Job

Another Original Canedy-Otto Feature

That of first offering an electric bench drill completely equipped and ready for the job, the improved design eliminating the use of all gears and placing the cone pulley in exact alignment, enabling the belt to be run at its maximum speed. It also eliminates all twists and turns of the belt, meaning both a saving of belts and time, giving a greater speed of spindle, a feature of great advantage when using drill for small diameter.

Regular equipment consists of vertical type ball-bearing motor, toggle type switch, extension cord, socket, belting and chuck.

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

New York Branch
407 Broome St.

Complete stock carried at branches

San Francisco Branch
955 Folsom St.

Let AIR do it—!!

Increase your Tapping 100 to 300%
Used in many big motor plants of U. S.

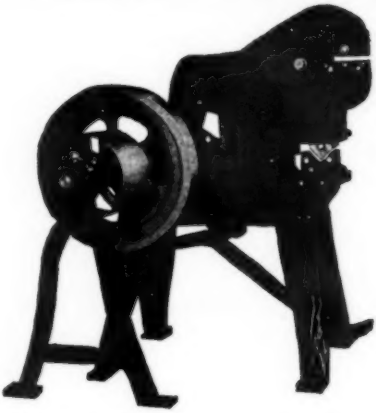
Makes new Tapping records everywhere

High Speed Pneumatic Oscillating Tapping Machine

This machine automatically carries out the principle of hand tapping.

We make guaranteed production estimates.

W. GATERMAN MFG. CO., Manitowoc, Wis., U.S.A.



No. 52—Built in Seven Sizes

BELOIT

Combined Power Punches and Shears

Series 51 to 56

The Beloit Combined Power Punches and Shears offer an unequalled combination of simplicity of design, construction, range of capacity, and moderate initial cost.

Invaluable in any plant for punching, shearing and fabricating steel bars or structurals.

An indispensable equipment for the manufacture of automobile springs and bumpers.

Tell us about your Punching and Shearing requirements. Our line is extensive, and we have a Beloit Machine for your work.

Send for our new catalogue No. 11 which describes the Beloit line of Punches, Shears and Bending Rolls.

Hendley & Whittemore Co.

100 S. State St. -:- -:- BELOIT, WIS.

Spring Press

(UNIFORM BLOW)

Foot or Power

Single and Double Action

These new dependable Presses are used in large numbers by manufacturers of—

Electric Devices, Toys,
Jewelry, Clocks, Cutlery,
Hardware, Radio Sets,
Instruments, Etc.

The Uniform Blow is a very special feature—it increases production and eliminates costly inspection. Investigate.

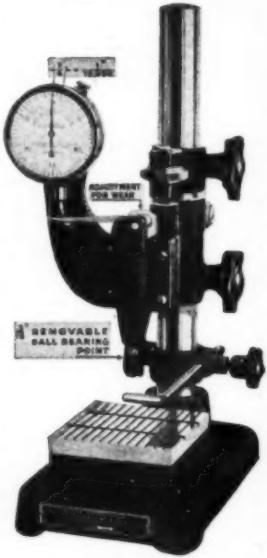
The Taylor & Fenn Co.

Hartford, Connecticut, U. S. A.

Easy Precision Readings

The New 1926 Model Active Comparator

Accuracy can no longer be a point of conjecture when you use the new 1926 model "Active Comparator." It can be used in either the shop or inspection department.



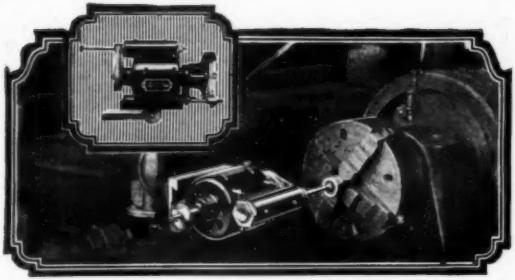
The large indicating dial relieves eye strain and at the same time shows how much the work is off and which way. The operator can test more rapidly and with less fatigue because he can use both hands.

The sensitive parts are not subjected to any inaccuracies, caused by expanding from the heat of the hand, as they need never be touched in the process of inspection.

We will gladly send you complete information concerning this precision instrument and the many attachments that make it adaptable to a great variety of work.

The Active Machine & Tool Co.

1221 West 6th Street, Cleveland, Ohio



Even SKF Trusts Its Grinding to Dumores

THE photograph above shows a Dumore No. 2-AG grinder in action in the tool room of the Hess-Bright Mfg. Co., subsidiary of SKF Industries, Inc. Here again Dumore grinders have been approved by an internationally famous institution; another convincing proof of their ability to perform reliably and efficiently regardless of how exacting or how difficult the requirements may be.

The same features that make Dumore grinders worthy of the trust of such a world prominent concern as SKF Industries, will be equally valued by you, once you have used them in tool room or shop. Available in six styles and sizes—each with individual speed ranges—they offer a grinder with the correct cutting speed for any grinding need. Dynamic balance and smooth operation of Dumore grinder motors eliminate vibration. Ability to operate on either alternating or direct current assures 100% utility. Portable, they save tearing down expensive set-ups.

If maintenance of grinding limits as close as .0001, without taper, bell-mouth or chatter marks, appeals to you; if greater production, lowered labor costs and other resultant advantages of Dumore operation interests you, it will pay you to send for our grinder catalog. Your copy is wrapped—ready for the mail. All we need is your name and address. Write!

Wisconsin Electric Co., 43 Sixteenth Street, Racine, Wis.

DUMORE HIGH SPEED GRINDERS

PEERLESS
SURFACING MACHINES
for
Grinding and Finishing
Flat Work

4' Bench Model

Larger Machines in Both Horizontal and Vertical Styles

SEND FOR FOLDER

PEERLESS SURFACING MACHINE CO., Inc.
TROY, N. Y.

Don't Forget This

Precision Truing Tools

will cut down your cost of truing grinding wheels.

The wheel is trued more quickly—the wheel pores are opened up better, hence will grind more pieces before requiring truing again.

THE SAVING IS ALL PROFIT TO YOU

WHEELS

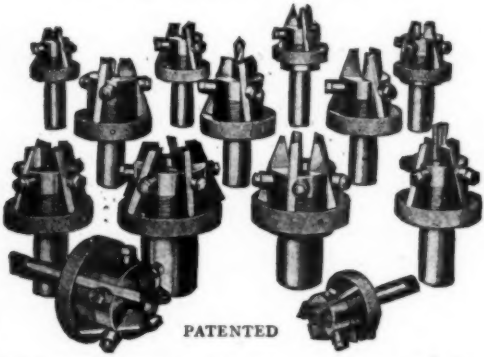
Our truing wheels are especially made for truing and are superior for this work.

We also make small grinding wheels, 6-inch diameter and less.

The Precision Truing Machine & Tool Co.
CINCINNATI, OHIO

A Saving Hint for You—

"Use Genesee Hollow Mills"



THEY SAVE—Because the seven sizes cover the entire range from ⅛" to 2", which ordinarily requires hundreds of solid tools;—because one set of blades outlasts three to five solid tools, and can then be replaced at small cost.

THEY SAVE—Because they are ideal for finishing castings, forgings, etc., and more economical than non-adjustable mills for every purpose. Genesees cut up to 15" a minute in steel. They are stronger than solid tools and cannot change in size.

NOW MADE in six different styles, from the heavy roughing Style "B" to the accurate finishing Style "F." We also make Style "N" Mills for all Brown & Sharpe automatics, and special size and style to your order. You will find them—

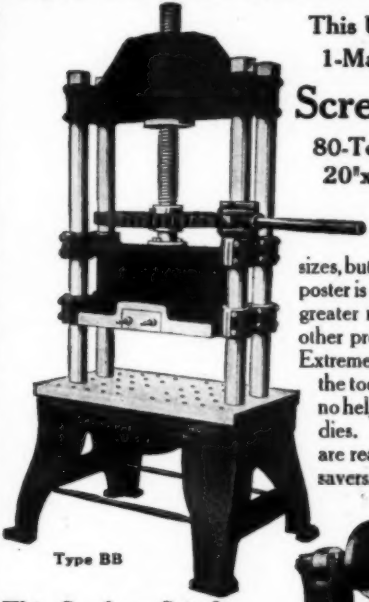
All real cost reducers—write us about your needs

Genesee Manufacturing Co., Inc.

Rochester, N. Y., U. S. A.

Manufacturers of Genesee Rapid Production Tools. ***Est. 1908***

Best for Heaviest Work—



Type BB

This Up-To-Date
1-Man 4-Post

Screw Press

80-Ton Pressure
20"x36" Table

We also make three smaller sizes, but this sturdy four-poster is stronger and has greater rigidity than any other press of this type. Extremely convenient—the tool maker requires no help in handling the dies. All four sizes are real time and labor savers.

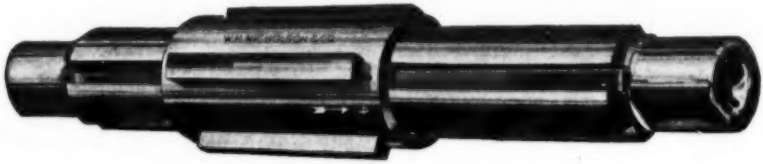
This Surface Grinder

is a revelation in quiet efficiency. Powerful, rigid and accurate. Has non-vibrating wheel. Both feeds have graduated dial.

Economy Tools. Write for Details

JARECKI MACHINE AND TOOL CO.

Successor to Manhattan Machine & Tool Works
Dept. A. GRAND RAPIDS, MICH.



TURNING a solid mandrel up for every job is nearly as bad shop practice in these days, as making a solid reamer for every job instead of using an expansion reamer. Write us about expanding mandrels.

W. H. Nicholson & Co., 117 Oregon St., Wilkes-Barre, Pa.

Catlins Cut Keyseating Costs

There's a Size for Every Need

NO MATTER whether you have to cut a thousand keyseats or only a few, a "Catlin" will cut them all to even better than a 1000th of an inch accuracy.

But it is more than accurate—it is also rapid. It cut a keyseat 6" long, 1" wide and 7/16" deep in a cast steel hub, in 3 minutes; this was in the course of an ordinary day's work, with no attempt made to estabish a record.

Great Economy

On some classes of work it is possible to keyseat piece after piece without clamping down the work, or stopping the machine.

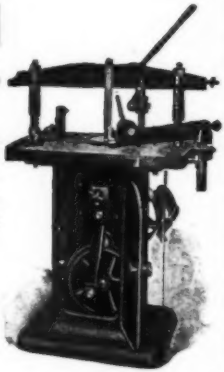
Catlins are making new records right along—why not have them save time and money in your shop?

Let us mail you the interesting folder, describing the various sizes, including their capacities

Chattanooga Machinery Company

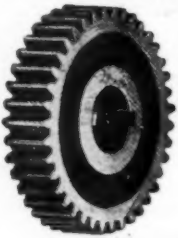
2401 Bennett Ave., Chattanooga, Tenn.

The Economical Keyseater



The DAVIS is Built in Two Sizes: No. 1 and No. 2

And The **Job**



Cuts keyways in pulleys, gearblanks, bell cranks, crank handles, etc.; does slotting & oil grooving.

The **Cutter**

In sizes from 1/16 to 1-inch

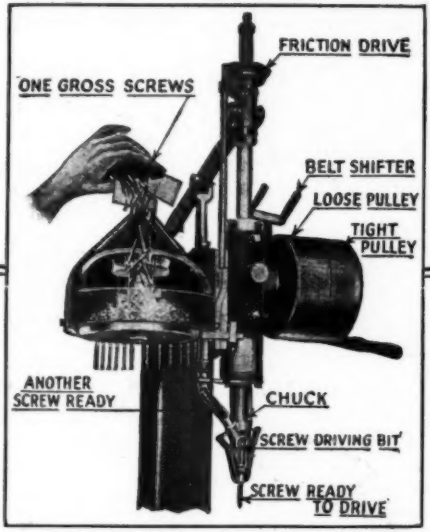
Write for folder, with table of cutting time

Davis Keyseater Company

255½ Mill Street, Rochester, N. Y., U. S. A.

Investigate This Method of

Reducing Screw Driving Costs



Magazine Feed of the Reynolds Automatic Screw Driver

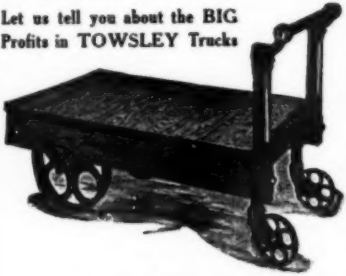
IF THE REYNOLDS Automatic Screw Driving Machine, with its magazine feed, is paying for itself three or four times a year in many of the best plants of the country; if boys and girls in those plants are driving 800 to 1,200 or more screws an hour on the "Reynolds" with mechanical precision, ***isn't it at least worth investigation?*** When writing, please tell us dimensions over all of your work and length and gauge of screws used. We may surprise you.

The Reynolds Machine Company

Dept. H. H., Massillon, Ohio

Repay Cost 5 Times a Year

Let us tell you about the BIG Profits in TOWSLEY Trucks



Efficiency EXPERTS say that

TOWSLEY TRUCKS

repay their cost every two to three months.

Every style for every need.

Glad to send you complete data and prices

John T. Towsley Mfg. Co., Cincinnati, Ohio

I Am "Johnny-on-the-Spot"

Who outlifts 8 to 10 men! It's easy for one man and the ever-ready

CANTON Portable Crane, Hoist and Truck

to move machinery and heavy stuff which otherwise would require 8 to 10 men.

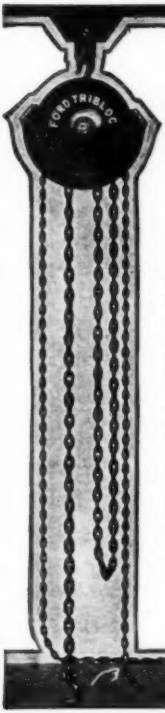
The new Safety Friction Load Brake can be added at small extra cost to both new and old Cantons.

The several sizes are shown in Booklet E-8

CANTON FOUNDRY & MACHINE CO., Canton, Ohio

New York Office: 203 East 15th Street, Second Floor

TRIBLOC CHAIN HOISTS



Only a few minutes

—but it takes the men from their jobs

Whenever lifting and hauling of loads is done in your shop by machine operators, it means that you pay for not only the time of the men but the idle time of machines, too.

Let brawn of steel do the lifting for these machine operators. Let them use all of their time for the profitable job of keeping the machines producing.

Let us tell you how you can use Triblocs and why it will pay you to install them. Ask for Catalog 7-B.

FORD CHAIN BLOCK CO.
2nd and Diamond Streets,
Philadelphia, Pa.

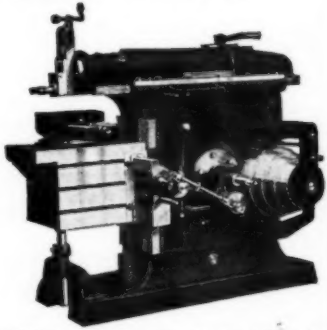
We also manufacture "THE MOTORBLOC"
—an electrically driven chain hoist.

SHAPERS

12", 14", 16" Plain Crank, 16", 20", 25" B. G. Crank, either Cone Driven or through Speed Box.

Belt Shifter Regular Equipment All Cone Driven Shapers.

32" Back Geared Crank, Single Pulley Drive.



The Smith & Mills Co., Cincinnati, O., U.S.A.

Armstrong Tools

Tool Holders

Over 100 shapes and sizes for every operation on Lathe, Planer, Shaper, Slotter, etc.—the only complete line. Better have our Tool Holder Catalog.

Ratchet Drills

For all purposes—"Packer," for rough service; "Standard," for general use; "Weston," extra heavy; "Universal" and "Short Ratchet." Ask for Ratchet Drill Catalog.

Drop Forged Wrenches

All kinds. All sizes. Highest quality. Write for Catalog of Steel Wrenches.

Clamps and Dogs

Drop forged. All shapes and sizes. Highest quality. Alloy steel screws. Separate Catalog.

Armstrong Bros. Tool Co.

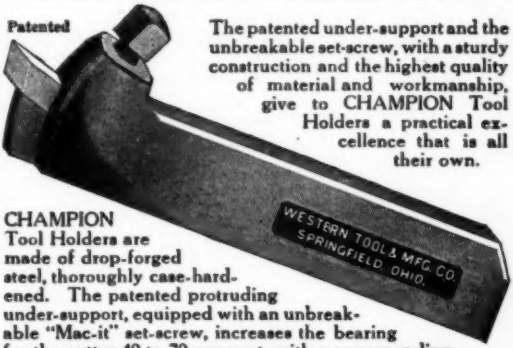
"THE TOOL HOLDER PEOPLE"

308 N. Francisco Ave., Chicago

Champion Tool Holders

Turning Tools — Boring Tools — Planer Tools
Cutting-Off Tools—Threading Tools
Grooving Tools and the Champion Drill Holder

Patented



The patented under-support and the unbreakable set-screw, with a sturdy construction and the highest quality of material and workmanship, give to CHAMPION Tool Holders a practical excellence that is all their own.

CHAMPION Tool Holders are made of drop-forged steel, thoroughly case-hardened. The patented protruding under-support, equipped with an unbreakable "Mac-it" set-screw, increases the bearing for the cutter 40 to 70 per cent, with a corresponding increase in cutter economy. It also absorbs the heat from the cutter and permits heavier cuts, with less breakage.

Patented

Champion Boring Tool

This tool is indispensable for inside threading and boring. Takes any length of cutter, which may be used down to short lengths. Cutters, drills, reamers, taps and many other tools can be used in this Holder.

Write for new Catalog and Price List

The Western Tool & Mfg. Co.

Springfield, Ohio

Grant Noiseless Rotary Rivet Spinner

One rivet per second.
Heads highly polished.
No hammer or tool marks.
The work is always uniform.
As tight or loose as desired.
Works in hard-to-get-at places.
It's easily operated by cheap help.
A boy or girl can manipulate it.
And—it's noise in operation.

Write today for Catalog, showing several styles. Also send us samples of your work for riveting; we will return them with close estimate of cost.

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

Reduce Your Oil Bills 90%

With the Curtis Centrifugal Oil Extractor

An amazing saving—but the Curtis will do it.

Reclaims 90% of the cutting oil that is usually carried away on chips, and the oil may be used over and over.

The No. 250, shown in picture, is medium in size. It handles 15 bushels of chips per hour, from which it reclaims 30 gallons. One man can handle three of these machines.

Figure the saving, with cutting oil at 30 to 50 cents a gallon.

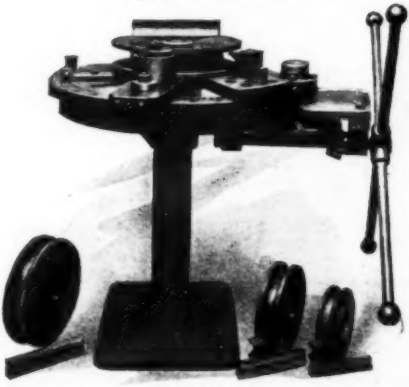
The Curtis Centrifugal is made with capacities for all requirements, belt or motor drive.

Tell us about your work and we'll submit estimate of saving

The Leon J. Barrett Company
Grafton St., Worcester, Mass.

A New Horizontal Pipe Bender

By PEDRICK



Universal satisfaction for the past 20 years has been the keynote of our success with bending pipe.

Recently we have made ***two*** radical departures, viz., the horizontal table and the improved bending principle, which offers decided advantages in ***Time-saving, Convenience*** and ***Superior Work.***

Iron, steel, galvanized and copper pipe are bent cold and unloaded on the radii of the rolls. For 2" and under.

We have a Bulletin awaiting for you.

SEND FOR IT NOW.

Pedrick Tool & Machine Co.

3644 N. Lawrence St., Philadelphia, Pa.

Manufacturers of Cylinder Boring Bars, Portable Millers, Crank Pin Turning Machines, etc.

Write!

TOLHURST Chip Wringers reclaim 6 to 15 gallons per load and handle three or four loads an hour!

Tolhurst Machine Works
Troy, New York

FEDERAL

DIAL INDICATORS
for Gauging —
DEPTH-PITCH
THICKNESS
ROUNDNESS
LEAD-ETC.
FEDERAL
PRODUCTS CORPORATION
PROVIDENCE
R. I.

A Positive Quick-Acting Lock

For Adjustable Quickly-Opened Dies

Instead of Clamps, Levers, Screws or Nuts that must be strained or pounded to make them hold threading dies in position.

Dies adjust for variations and open quickly for removal.

That is one great difference between the "DUPLEX" DIE STOCK for pipe and others of the same type; but there are several more points of difference and value.

THE HART MFG. CO., 2319 E. 20th St., CLEVELAND, O.

USE the CHICAGO No. 2

POWER PIPE THREADING MACHINE

For
Production and Precision Threading

PORTABLE

Capacity:
¼" to 2" Pipe
½" to 1½" Bolt

Featuring:

1. Quick Die Change
2. Automatic Die Head
3. Three Speeds
4. Perfected Oil Control

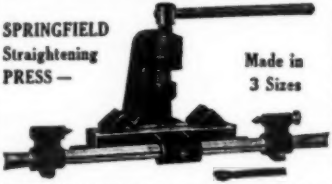
Send for Catalog

Chicago Pipethread Machine Co.

Office and Factory: 1623 Racine St., Racine, Wis.

A Great Labor Saver—

SPRINGFIELD Straightening PRESS—



Made in 3 Sizes

Invaluable in the tool room, also for straightening crank and cam shafts and other automobile parts.

YOU WILL FIND the arrangement of the Springfield Press makes it ***"the acme of convenience."***

Any work within the range of centers may be tested and straightened without unnecessary walking from press to lathe each time in straightening rough or finished work. Any length, however, may be operated upon. Of "**Springfield quality**" thruout.

Write for folder illustrating many of its uses

The Springfield Machine Tool Co., Springfield OHIO

We also manufacture Engine Lathes and Shapers

E-Z THREAD DIAL

This device on your lathes will lower the cost of, and increase the efficiency of, thread cutting.

Can be attached to all size lathes.

E-Z to install.

E-Z to use.

Eliminates stopping or reversing the lathe.

Saves cost of backing belt.

Saves power to drive same.

Fast growing in popularity.

A large corporation ordered nine at one time. Another five.

Sent on thirty days' trial.

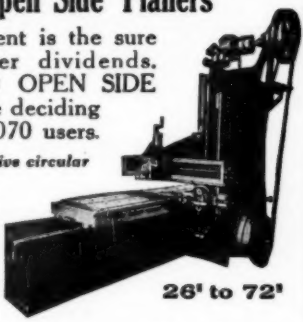
Send for folder today.

JAMES M. COLVEN, 20 Wolffe Street, Yonkers, N. Y.

Cleveland Open Side Planers

Your equipment is the sure way to larger dividends. CLEVELAND OPEN SIDE PLANERS are deciding this to over 1070 users.

Send for descriptive circular



Herringbone Gears for Intermediate Reduction; Power Rapid Traverse; Improved Head Clamp; Single Turn Rail Clamp; Automatic Trip to Rail Raising Mechanism. Forced Feed Lubrication to Vees if desired.

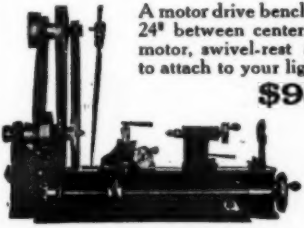
26' to 72'

The Cleveland Planer Co., 3148 Superior Avenue, CLEVELAND, OHIO

Established in 1900

Just-Rite Lathes

Made in Sizes from 10-in. to 20-in.



A motor drive bench lathe, 10" swing, 24" between centers, complete with motor, swivel-rest and pan, ready to attach to your light socket.

$98

JUST-RITE for turning, boring, milling and drilling (not screw cutting).

Order one by express. Weight, 230 lbs.

A. V. Carroll Machine Tool Co., Norwood, Cincinnati, O.

Dependable Service on

Hollow Bored Forgings and Steel Shafts

If you make machines on which you use ***Lathe Spindles, Piston Rods, Rams, Clutch Shafts,*** or similar parts, let us quote on your requirements. Our products are right, our prices are right, and our service is dependable.

Send along your blueprints; we'll both be pleased with a trial order

American Hollow Boring Co.
Erie, Penna.

Vanderbeek Universal Joints

—represent the practical refinements of 25 years experience in manufacturing Universal Joints. All parts are generous sized, fully protected against dirt, and are practically self-oiling. Exceptionally strong, they transmit full power up to 70°.

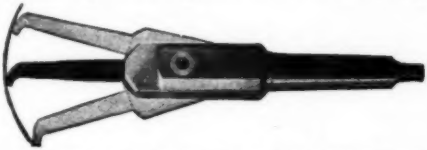
Vanderbeek Joints are in daily use on thousands of machines.

Write today for our Descriptive Catalog.

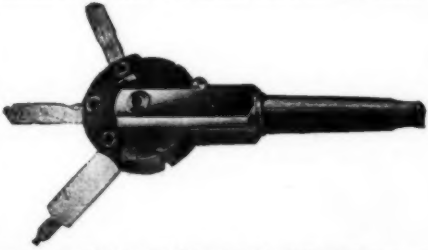
American Tool Works, Inc.
Hartford, Conn., U. S. A.

SAVES

Time, Temper and Money



IT COSTS LESS TO USE AN E-Z SET BORING TOOL. Tool or production work on Milling Machine, Boring Mill, Drill Press, Screw Machine or Lathe. Large boring capacity. Rigid, positive adjustment, actuated by a worm; made in three sizes.



WITH THE M-P THREE TOOL TURRET you can convert your bench lathe, engine lathe or speed lathe into a screw machine, or, you may need an auxiliary turret in your screw machine.

Send for a circular

We want live wire mechanical salesmen.

Manufactured by

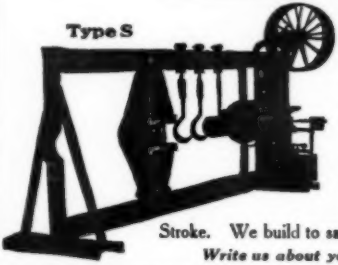
The Maxwell Products Co.

Ottawa & Indiana Ave., Cleveland, Ohio

Lourie Wheel Presses

are made with—

CAST STEEL CROSSHEADS
I-BEAM BUTTRESSES
DIFFERENTIAL PUMPS



There are no better **WHEEL PRESSES** — few as good.

Made in any tons capacity.

Any distance between Strain Bars. Any length of Ram Stroke. We build to save you money.

Write us about your needs

LOURIE HYDRAULIC CO., SPRINGFIELD, ILL.

Atlas Arbor Presses

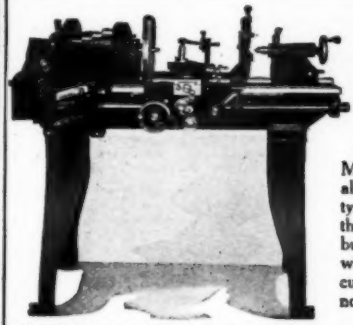
For All Forcing Operations

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

Write for our Bulletin— showing 30 different sizes

Atlas Press Co.

Department B,
Kalamazoo, Michigan



Another Sidney Lathe

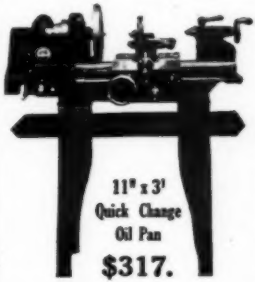
Our 11" x 4' Medium Pattern, all geared head type. It is up to the minute with built-in features which insure accuracy and economical service.

Write for catalog and prices on the complete line of Sidney Lathes. Address Dept. 1801

The Sidney Machine Tool Co.
Sidney, Ohio

SIDNEY SERVICE

Monarch Jr. Lathes



11" x 3'
Quick Change
Oil Pan
$317.

are the smallest members of the Monarch lathe family. Yet they are the "biggest little lathes" built.

The Monarch line of lathes includes all sizes and types from the little 9-inch Junior lathe to the big, massive 30-in. lathe. In this line there is a lathe to fill your requirements at the price you want to pay.

Send for Catalog

The Monarch Machine Tool Co.
206 Oak Street, Sidney, Ohio

For Sure Balance--

an absolutely level and solid "Way" is necessary

Bowsher "Balancing Ways"

are brought to an absolute *level* in ten seconds. No revolving parts.

The edges or "knives" upon which the work is tested are ground *true*, and are mounted upon the planed "ways" of a heavy bed or frame.

Standards adjustable to suit length of arbor.

Three sizes for floor—one for bench use

Send for Catalog "F"

The N. P. Bowsher Co., South Bend, Ind.

Anderson Improved Balancing Ways

Ever-Ready—Sensitive—Reliable

They need no adjusting. The rotating discs made of chilled iron run in specially designed ball bearings and are exceptionally sensitive. You will like 'em.

The six sizes have no equal for balancing pulleys, gin brushes, turbine rotors, crank shafts, polishing wheels, fly wheels, etc.

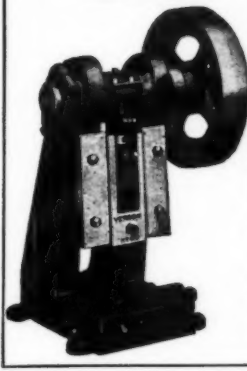
"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards	20"	30"	30"	66"	88"	20'
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight	45	90	150	350	650	
Code	Bend	Bid	Bis	Bib	Ben	

Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.

1915 Kishwaukee St., Rockford, Ill.

Trade **Verson** Mark



"Lowest cost per 1000 pieces"

The Verson No. 00, No. 1 and No. 3 are ideal for a large variety of light work requiring accuracy with speed. Rugged and powerful, they can stand rough usage.

The No. 00 shown, occupies only 12x10 in. bench space; it may be mounted on table and legs.

Verson Presses provide a complete line for light work. Don't tie up large presses when these high-grade, low-cost, economical machines can handle your small work much more accurately, quickly & economically.

Ask for catalogue and facts

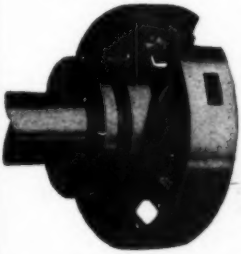
LaSalle Machine Works

3013 S. LaSalle St., Chicago, Ill.

Specializing in Small Presses and Angle Shears

Conway Clutches Combine—

Compactness—Simplicity—Convenience



The picture shows the CMT Close Coupled Clutch, single type, specially designed for cramped and crowded installations where the clearance is in fractions, and where transmission of power must be effected in a minimum amount of space. None of the standard Conway features is sacrificed in this design except the full length shaft bearing. We also make the double type.

Conway Clutches always make good. Write for Bulletin No. 26 today.

The Conway Clutch Company

1951 Riverside, Cincinnati, Ohio

You Needn't Worry When Taps Break

With a Walton Tap Extractor Handy

When your taps break—at or below the surface of the work, don't wait for your men to dig out the pieces—

Use a Walton Tap Extractor! Just insert the fingers in the work, give a few twists, and the tap backs out easily and safely. Sizes No. 8 to 1¼".

Yes, we ship on approval—60 days
Just send us your name and address

The Walton Company
Hartford, Conn.

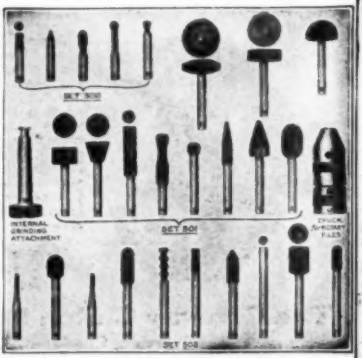
Strand
Rotary Files

Used with Strand Flexible Shaft Machines. Are giving excellent service.

Write for Catalog

N. A. Strand & Co.
5001 No. Lincoln St
CHICAGO

HIGH SPEED
HAND CUT ROTARY FILES



Winterhoff Tool and Disc Grinders

No. 2 Combination Grinder and Disc Grinder

DRILLS
GRINDERS
DISC GRINDERS
SAWS
SANDERS
All Motor Driven

Price $45
F. O. B. Elkhart

An ideal tool for the tool room for finishing die blocks or any flat surface discing. Equipped with 6" by ½" tool grinding wheel, wheel guard and tool rest, 8" disc wheel, tilting table and protractor guide, ¼ h. p. motor 1750 r. p. m. Also made in Plain Grinder model at **$30.**

Send for circulars describing these machines or see your dealer

Winterhoff Tool & Machine Co., 109 South Elkhart Ave., ELKHART, IND., U.S.A.

BURKE 10-in. Sensitive Bench Drills

Are considered standard equipment by the majority of the machine tool dealers in the United States.

There must be a Reason

No. 0 Belt Driven $19
No. 1 Belt Driven $22
No. 1 Motor Driven $42 to $47

We also build a 12-inch Bench Drill 9-16" Capacity

No. 1

The Burke Machine Tool Co., 297 E. 16th St., Conneaut, Ohio

The "Utility" Sleeve

Cuts Small Tool Costs

A Detachable Taper Shank for Straight Shank Tools

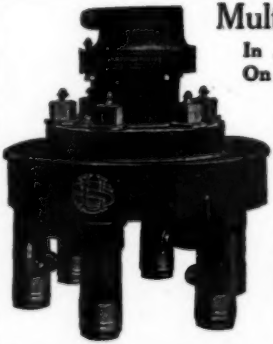
Insert a straight shank drill or reamer in this Sleeve, and it works as efficiently as a solid taper shank tool.

Only the straight shank tool of high speed steel is discarded when worn or broken—not the entire taper shank tool. Cuts tool costs, saves time, increases output.

Write for "Utility Tools" Catalog

The J. C. Glenzer Company

6469 Epworth Blvd., DETROIT, MICH.



Multiple Drilling

In ANY PATTERN On a Single Spindle

You can do so much more work and cut down your drilling costs with an up-to-date

U. S. Multiple Spindle Drill Head

Made regularly with 2 to 6 adjustable spindles. Special Heads made to your order, with adjustable or fixed spindles.

Let us help you make a worth-while saving

The United States Drill Head Co., 1952 W. Sixth St., CINCINNATI, O.

Michigan Agents—National Sales Engineering Corp., Detroit, Mich.

A Real Quick Change
Drill Chuck

No hammer or special device required. No separate drift or key to get mislaid. Simply strike the end of drill, and out it comes. A one-armed man can do it.

The Titan Drill Chuck

has all the good features of other chucks of this type, plus a "quick change" that's real. Operates in any position.

Made in sizes No. 0 to No. 5 for any taper shank drill, counterbore, reamer or similar tool. Saves time; cuts costs.

Write for description and prices

Titan Tool Company
Erie, Penna.

SIGOURNEY
Sensitive Drills

All Parts Interchangeable!

Made with 1 to 4 spindles. Self-aligning ball bearings.

Extremely sensitive, accurate and durable, they are ***quality*** drills for those who buy tools for what they do.

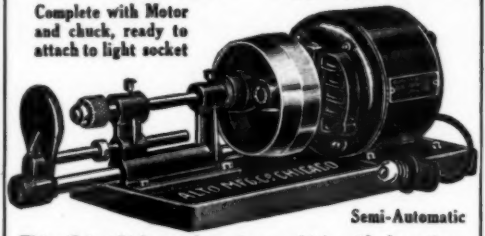
The picture shows our No. 0 2-spindle ball bearing Bench Drill--a splendid tool.

Booklets on both Plain and Ball Bearing Drills

THE SIGOURNEY TOOL CO., HARTFORD, CONN.

No. 1 ALTO Motor Driven, High Speed Tapping Machine

Complete with Motor and chuck, ready to attach to light socket



Semi-Automatic

This efficient high speed tapping machine, with three times faster reverse, is ***a real cost reducer!*** It is thoroughly well built, but so simple and compact in construction that we can offer it ***at a low price.*** Capacity, 3/16" in brass, ⅛" in steel. We also make larger motor driven Tapping Machines.

Write for descriptive Circular and prices today

The Alto Mfg. Co., 1647-51 Wolfram St. Chicago, Ill.

How would you like—

Ettco

to tap small holes as easily as you drill them; to tap them 2 or 3 times faster than usual; to wear out the small taps you are now breaking?

The Ettco High Speed Tapping Attachment usually increases output 100%. When a Gun Tap is used the increase is as high as 300%.

Try one for 10 days— if you can then spare it, send it back.

Try one for 10 days

Eastern Tube & Tool Co.

600 Johnson Ave., Brooklyn, N.Y.

The U. S.—

A Complete Motor-Driven

14" Sensitive Floor Drill

Price with motor, switch and belts - $115

Or with Counter-shaft for Belt Drive $70

Nothing Better for the quick and accurate drilling of holes ½" and smaller. Steel spindle, ground to size, with ball thrust bearing; vertical adjustment to head; tables for long and short work; three speeds, etc. Send us your order, or ask for more data.

The U. S. Machine Tool Co.

1952 W. 6th St., Cincinnati, Ohio

Thor Electric Drills—

Always dependable and do more work

THORS are always dependable, because they are the best that mechanical ingenuity, modern engineering practice, high-grade materials and skillful workmen can produce.

THORS do more work, because they have a remarkable motor of improved design; because better air cooling gives the motor a 25% greater safe capacity; because the reduction of friction to the lowest notch makes them wonderfully easy running; because their operation is easy and natural. And they are *safe!* Shocks are impossible.

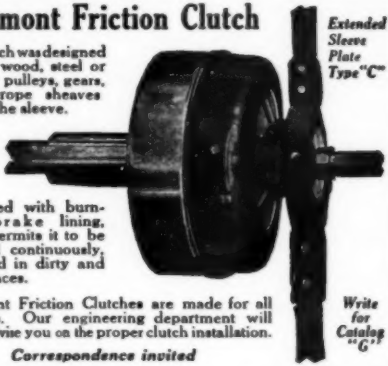
Our new Catalog describes and illustrates the entire THOR Line. Write for your copy; we'll be pleased to send it.

Independent Pneumatic Tool Co.

600 W. Jackson Blvd., Chicago, Ill.

Edgemont Friction Clutch

This clutch was designed to drive wood, steel or cast iron pulleys, gears, drums, rope sheaves etc., on the sleeve.



Extended Sleeve Plate Type "C"

It is lined with burn-proof brake lining, which permits it to be operated continuously, and used in dirty and dusty places.

Edgemont Friction Clutches are made for all purposes. Our engineering department will gladly advise you on the proper clutch installation.

Write for Catalog "G"

Correspondence invited

Edgemont Machine Co., Inc., DAYTON, OHIO

"The Handiest Racks in the Shop"

IDEAL FOR STORAGE—ALSO FOR SAVING STEPS

For Ideal Storage—

They keep pipe, shafting and bars neatly piled in a quarter of the usual space, where they may be assorted and counted, and easily handled on or off.

For Saving Steps—

Invaluable for keeping material within easy reach of workmen when making parts from round bars, or small manufactured articles from round stock.

So good that we ship them on trial!

Wm. S. Yohe Supply Co.

503 Mahoning Road, N. E., Canton, Ohio

T.H.L. Front Lever Bench Punch

Malleable iron body; working parts hardened. Steel shaft and plunger. Die cannot lose alignment with punch. All parts interchangeable. Built for hardest, toughest work.

PRICE $45

Extra Punches, 20 cents each; extra dies, 30 cents.

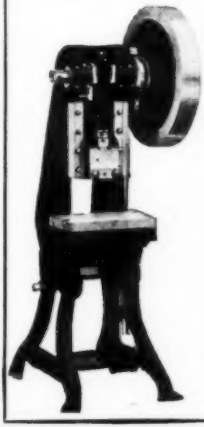
Capacity 13/32" thru 1/4" steel, 11/32" thru 5/16". Punches up to 1/2". Weight, 70 lbs.

A good buy; can ship promptly

T. H. LEWTHWAITE MACHINE CO.

(Est. 1890)

311 E. 47th St., NEW YORK



Husky, Powerful

speedy Punch Presses deliberately designed for High Production work.

All Types and Sizes

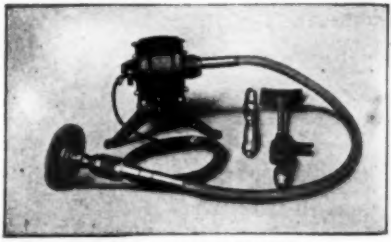
Write for Catalog

Rockford Iron Works

Rockford, Ill.

The Whirlwind Buffer and Grinder

Will cut the cost on any unhandy grinding or polishing job



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THOMPSON 10"x36" Universal

ALL Grinding on ONE Machine—

Thoroly efficient, accurate and dependable. Work adjusts to a fixed grinding wheel—an exclusive feature that's better.

For finest plain, surface, edge, die, cutter and internal grinding.

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Saves Time and Money

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Springfield, Ohio

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Portable Electrics
Stay on the job.

Hand and Screw Feed Drills ¼" to 2½" cap.
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The
Cincinnati Electrical Tool Co.
2678 Madison Road
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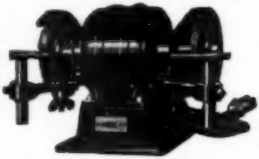
Bodine Portable Tool Grinder

Leaves No Excuse for Dull Tools



A one-purpose machine which sharpens tools so easily and perfectly that output is noticeably increased.

Some plants have found it highly profitable to have a "Bodine" in every department, instead of one centrally located grinder.

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Glad to mail you description, with the reasonable price
You may find this just what you've been looking for

The Bodine Electric Company
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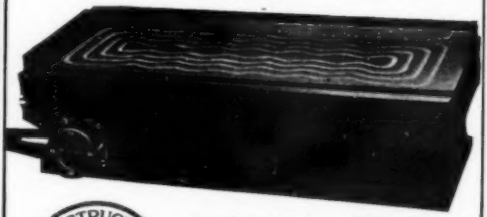
"D & W" Flat & Rotary Magnetic Chucks



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"GUSHER" PUMPS are simple, efficient, require the least power, and stand up to the severest wear and tear. They are "Pumps of Quality."

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Price, pump only, $22.50

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Our Pumps are used for Spray Guns, Glass Blowing and general commercial and laboratory blowing and suction purposes.

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Blow your Turnings or Borings away

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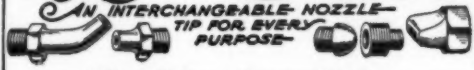

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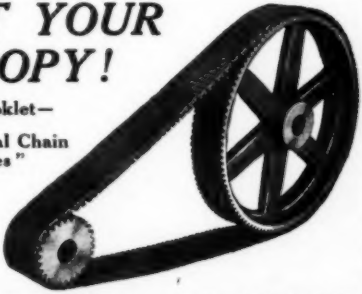

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Don't Forget the Swivel Joint Feature

Permits of carrying the lamp in any direction.

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Rapidly finding a place in large Industrial Plants, Machine Shops and Service Stations.

Now equipped with Belden Rubber Cord
Approved by the Underwriters

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Capacity 4 in. Can be used as a portable. Not necessary to bolt to floor. Runs from electric light or power circuit. Ask for bulletins on Racine High Speed Metal Cutting Machines of every Capacity to 18 in.

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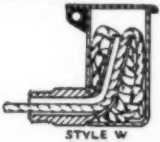
Made in Standard sizes.



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Metal Cutting

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CUT YOUR PURCHASES 90%

Over 100 Large Concerns Do It

CAN YOU SALVAGE A SAW FOR 5 CENTS? THIS MACHINE WILL

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THE WARDWELL MFG. CO.,

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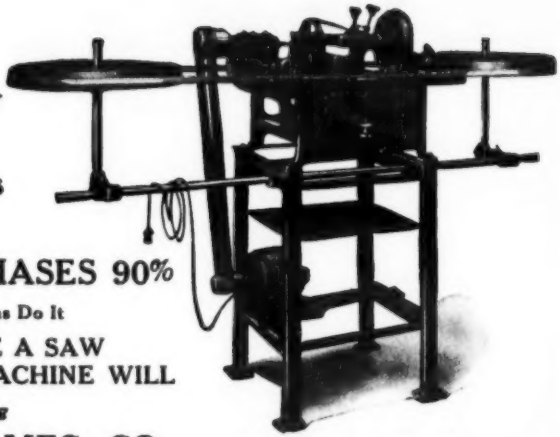

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From 10,000 to 350,000 pieces!

That's how ***Danly Die Sets*** increased production for one company.

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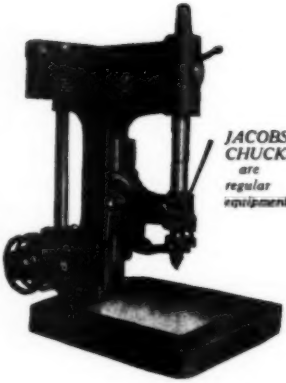

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STYLE DE, whi is s
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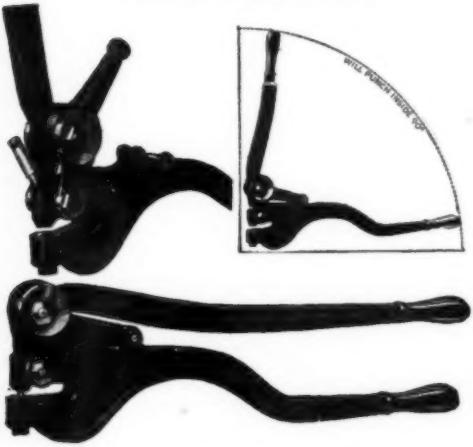

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Punch in center of	4¼ inches
Length over all	25½ inches
Weight	16 lbs.
Height of gap	⅜ inches
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We can furnish base for Bench purpose. Operating handles will not become disengaged. Roller Bearing. Drop Forged. No cams to wear out.

Just right for standing seams or sky-light work. Large throat clearance.

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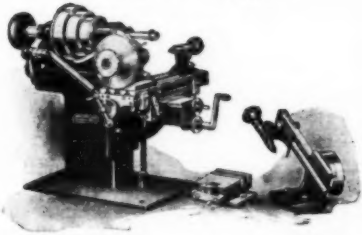
For speed and accuracy on any milling job



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When the manufacturer of a small milling machine realizes its possibilities, it can be made a tool of the widest usefulness.

Their long, practical experience with small millers has enabled Hardinge Brothers, Inc., to offer in the Cataract a milling machine capable of such a wide range of work, with such speed and accuracy, that it should be in active service in every shop.

You want money-making tools. If you will drop us a line, we shall be pleased to explain what this modern miller is, what it does, and how it does it.

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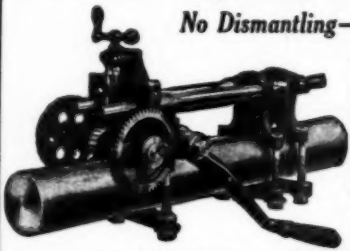

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Cuts keyways up to 12" long, in shafts up to 5" diam., anywhere in any position.

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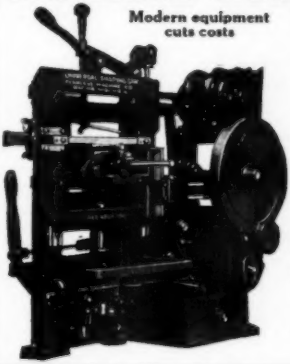

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SIZES:
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HIGH SPEED HACK-SAWS
6"x6" 9"x9" 13"x16"
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For Planers, Shapers, Drilling and Milling Machines

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Also 16" Mold Makers' Vise

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ALL BARKER VISES are made **extra heavy,** with **steel faced jaws,** and are **graduated to swivel any angle.** They stand lots of hard usage.

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It Costs Less To Cut

rounds, squares, flats and to

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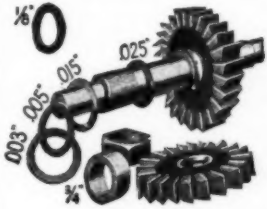
Steel Spacing Washers—

Made of a good grade of Cold Rolled Strip Steel, also known as Shim Steel



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Other thicknesses up to 3.000" made to order, with keyways if so ordered.

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Save Time Setting Gang Milling Cutters

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Hardened and Ground

PATENTED

"Wear-Ever" Adjustable Spacing Collars permit setting cutters to the thousandth part of an inch without removing from the arbor.

Stock sizes for 3/4" to 2 1/2" arbors, sent on approval They are adjustable in 12 steps of 2/1000 inches

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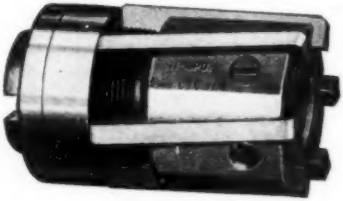

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This is a real production reamer. The left hand helical flutes cut fast and clean. Made only in high speed steel. Made with straight and tapered shanks. All sizes carried in stock.

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Drill press, 24" Aurora, b. g., s. h.
Grinder, No. 2 Cinti univ. 12x38.
Grinder, B. & S. No. 3 cut. & reamer.
Grinder, No. 11 Brown & S. plain.
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Lathe, 16"x8' Monarch, d.b.g.,q.c.g.
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HORIZONTAL BORING MACHINE

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Air compressor, National, 3-cylinder vertical, 100 cu. ft.
Broaching machines, two No. 1 and one No. 0 Lapointe.
Grinder, edge or guide bar, 60" Springfield, practically new.
Grinder, Blanchard No. 16, floor, motor drive type.
Miller, plain, No. 5 Brown & Sharpe, cone type.
Millers, 12" Cincinnati plain manufacturing, (2).
Wood cut-off machine, Greenlee, power feed, heavy.

Also 200 other Machine Tools of various types.
Send us your inquiries.

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13"x 5' Blount speed lathe.
13"x 5' South Bend, (2).
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Adams short-cut lathe, with taper.
34x36 Lo-Swing.

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22½" Sibley all-geared, p. f.
28" Barnes, s. h., tapper.
25" Barnes 4-spindle gang.
No. 3 Baush multiple.

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No. 2 Brown & Sharpe plain.
No. 3H LeBlond plain, cone type.

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14" Defiance, f. h.
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20" Blount wet grinders.
No. 15 Bryant, motor drive.
No. 26 Besly, double spindle, m. d.
No. 5 Oliver m. d. drill grinder.
LeBlond plain cutter grinders, (5).
26" Kern, s. h., b. g., p. f., t. a.
No. 1 Lumsden oscillating, new.
No. 11 Lumsden, b. b., cup wheel, new, (2).
10x30 Frazer self-contained.
6x32 Norton plain cylinder.
No. 23-B Valley City disc, new.

MISCELLANEOUS.

Band saw, 6" Napier.
Broaching mche., LaPointe, Hudson make, 8" capacity.
Centers, bench, Brown & Sharpe.
Cutting-off mchs., 4" Hurlbut-R., (2).
Gear generator, 18" Gleason, bevel.
Gear generator, 5A Lees-Bradner automatic.
Gear shapers, No. 6 Fellows, (3).
Hammer, drop, No. 5 Williams-W.
Lapping machines, Bethel-Player, new, (2).
Metal cutter, No. 1 Gray.
Screw slotter, No. 1 National Acme.
Shaper, 7" Rhodes horizontal.
Tooth round's, 12" Rochester aut. (2).
Tumbling barrels, No. 3-S Globe, (2).

SECOND-HAND MACHINERY

FOR SALE BY

A. D. White Machinery Co., 108-114 N. Jefferson St., Chicago, Ill.

BORING MILLS.

10′ Pond mill, 2 heads, motor drive.
6′ Pond, 2 heads, motor drive.
36″ Niles, 2 heads, belt drive.
30″ Bullard, 1 swivel turret head.
24″ Bullard vertical turret lathe.
2½″ bar Binsse horizontal mill.

DRILL PRESSES.

36″ Cincinnati, tapping attachment.
36″ Aurora, b. g., sliding head.
28″ Hamilton, b. g., sliding head.
28″ Aurora, b. g., sliding head.
24″ Cincinnati, comp. table.
20″ Barnes, b. g., tapping attach.
24″ Barnes all geared, 2-spindle.
36″ American sensitive radial drill.
48″ Dreses radial, gear box.
No. 2 Foote-Burt gang, 4-spindle

GRINDERS.

6″x32″ Norton, excellent condition.
14″x72″ Norton, rebuilt.
16″x48″ Landis crank pin.
16″x96″ Landis plain.
No. 85 Heald internal, (2).
No. 2½ Bath universal grinder.
Pratt & Whitney vertical surface.
No. 3½ Van Norman auto. ball race.
18″ disc grinder, pl. & univ. tables.
Several tool and cutter grinders.

MILLING MACHINES.

No. 3H LeBlond, vertical attach.
No. 3 Kempsmith pl., excell't cond.
No. 3 Cincinnati plain, rebuilt.
No. 2 Cincinnati plain, rebuilt.
No. 20 Ohio plain, rebuilt.
No. 1 Newton slab, 48″ table feed.
Nos. 2B and 2B heavy Brown & Sharpe, single pulley drive, plain.
No. 3½ Pratt & Whitney duplex.
No. 3 Cincinnati high power vert.
No. 5B Becker vertical.
No. 6 Becker vertical, 60″ feed.
No. 25 Becker plain (3).
No. 0 Rockford.
No. 3 Pratt & Whitney die sinker.
No. 6 Whitney hand (3).

LATHES.

14″x 6′ Whitcomb-Blaisdell, c. rest.
18″x 7′ Chard dbl. b. g., rebuilt.
20″x 8′ Lodge & Shipley, grd. hd.
20″x 8′ Hamilton, dbl. b. g.
20″x10′ American geared hd., q. c.
22″x10′ Davis dbl. b. g., quick chge.
34″x10′ Putnam heavy lathe.
38″x14′ Fifield, rebuilt.

PRESSES.

No. 1 Consolidated inc., 1½″ stroke.
No. 2 Consolidated inc., 2½″ stroke, and extra high die space.
No. 2 Amer. Can, inc., 2½″ stroke.
No. 6 American Can combination geared, 6″ stroke, 9½″ die space.
No. 69 Stoll st. side, grd., 8″ stroke.
No. 55 Adriance dbl. crank, 2″ str.
No. 666 Toledo embossing press, 1000 ton pressure.
No. 169½ Toledo toggle drawing press, used 8 months.

SCREW MACHINES.

⅝—⅞″ Cleveland auto., serial 30000, double cross slides, (5).
2″ Cleveland auto., serial 26302.
No. 1 Garvin hand, ⅝″ cap.
No. 3 Superior hand, 1 5/16″ cap.
No. 4 Milholland hand, 1⅝″ cap.
Kent Owen hand, 1⅝″ cap.
⅝″ Hartford auto., cheap.
⅞″ Cleveland auto., cheap.
1⅛″x18″ Pratt & Whitney hand, with quantity of equipment.

TURRET LATHES.

3″x36″ Jones & Lamson.
21″ Gisholt, late type.
24″ Gisholt, 6¾″ hole in spindle.
20″ Fay & Scott universal turret.
No. 3 Pratt & Whitney turret lathe, 3″ hole in spindle.
No. 3 Warner & Swasey Fox lathe.
18″ Springfield Fox lathe.
16″ Dreses Fox lathe.
18″ Amer. Tool & Mch. Co. Fox lathe.
22″ Reed turret lathe.
5½″x10″ Potter & Johnston.

MISCELLANEOUS.

Bolt cutters, 2″, 3½″, 4″.
Brake, 6′ Robinson, 16 ga.
Gear shapers, No. 6 Fellows.
Hammer, 80 lb. Bradley, helve.
Keyseater, No. 0 Mitts & Merrill.
Pipe machine, 4″ Saunders.
Planer, 30″x8′ Ohio, heavy pattern.
Planer, 36″x36″x18′ Betts, 2 heads.
Planer, 58″x56″x14′ Gorton, rev. motor, 4 heads, new.
Shear, No. 16A Niagara, ring & circle.
Slitter, gang, No. 1 American Can.
Surface plate, 24″x48″.
Thread roller, No. 119 BEss, screw c.

Send for latest list.

FOR SALE BY

Brown Machinery Co., - - 2323 N. 9th St., St. Louis, Mo.

Buffing lathe, Hisey 3 h. p. electric, a. c., 3 phase, 60 cycle, 220 volts.....$ 100.
Buffing lathe, U. S. 3 h. p. electric, a. c., 3 phase, 60 cycle, 220 volts .... 125.
Drill, 24" Aurora, sliding head, tapping attachment..... 275.
Drill, Baush No. 3 multiple, cap. 30 spdls., rectangular hd. 20x40". Price 1500.
Drill, radial, horizontal, No. 1 Barnes, d. c..... 300.
Gear shaper, 36" Fellows..... 500.
Grinder, cylinder, No. 60 Heald..... 850.
Grinder, No. 14 Gardner, b. b., disk, dry, 20" disks, good cond. Price 400.
Grinder, No. 6 Besly two-spindle disk, 20" disks. Price..... 300.
Grinder, No. 1 Brown & Sharpe universal, 10x24; good condition. Price 375.
Grinder, No. 14 Besly single spindle ring wheel. Price..... 400.
Grinders, emery, St. Louis and Western.
Hammer, size A United, motor driven..... 350.
Lathes, 16"x6' Monarch, heavy duty, each..... 375.
Lathe, 20"x8' Reed,..... 300.
Miller, No. 1B Fox, hand & pwr. fd., 18x8x14; new, never used. Price.. 350.
Motors, (40); 1 to 40 h. p., 3 phase, 60 cycle.
Planer, 60"x60"x29' Niles, 3 heads.
Polishers and buffers, drop head, New Britain, each..... 50.
Press, geared, No. 5 Stiles & Parker, weight about 9000 lbs.
Shear, Marshalltown No. 134 rotary splitting, cap. ¼" plate; 4' throat; arranged for motor drive. Like new. Price..... 600.

FOR SALE BY

Fitzsimmons & Cole Machinery Company

1208 House Building, - - - Pittsburgh, Pa.

Air compressor, Ingersoll 10x10, 150'.
Air compressor, Chicago 12x14", 275'.
Blower, No. 6 Buffalo cupola, b. d.
Bolt cutters, 1¼", 2", 2½", 4" Landis.
Boring mill, 62" Bullard, b. d.
Boring mill, 84" Bickford, m.d., new.
Bulldozer, No. 28 W. & W., m. d.
Drill, radial, 6' Prentice, s. p. d.
Drill, 24" Cinti upright, sliding hd.
Drill, 25" Weigle upright, sliding hd.
Drill, 38" Prentice upright, slid. hd.
Flanger, McCabe, ½" capacity.
Gear planer, 24' Gleason, bevel.
Grinder, dbl emery, wheels 18" dia.
Grinder 16"x48" Landis, crankshaft.
Grinder, 16"x52" Landis, plain.
Grinder No. 16 Blanchard.
Hammer, 50 lb. Mayer, upright.
Hammer, 250 lb. Beaudry, upright.
Hammers, 2-B, 3-B, 4-B & 4-N Nazel.
Keyseater, No. 1 Catlin.
Lathe, 16"x6' American, q. c. g., t.a.
Lathe, crankshaft, 30"x14' L. & S.
Lathe, 30"x16' L. & S., q. c. g., t. a.
Lathe, 52"x34' Pittsb'gh, 2 car., m.d.
Lathe, turret, 5"x30" Bardons & O.
Miller, univ., Oesterlein, 25½x7½x10".
Pipe machine, 2" Williams, m. d.
Pipe machine, 12" Jarecki, b. d.
Planer, 36"x36"x24' Pond, 4 hds, b. d.
Planer, 48"x38"x14' Pond, 4 hds., b.d.
Planer, 96"x96"x20' Pond, 4 hds., m.d.
Planer, o.s., Cleveland, 36"x36"x16'.
Planer, o. s., Cleveland, 48"x48"x20'.
Press, baling hyd. No. 12-P Logemann
Press, Ferracute P-1, 1½" stroke.
Press, No. 21 Bliss, o. b. i., 2" str.
Press, No. 37½ Bliss, s. s., 6" stroke.
Punch, hand, Bertsch H-5, 2"x8".
Punch, hor., Cleveland, 1" thru 1".
Punch, multiple, No. 5 H. & J., 10'.
Punch & shear, Cleveland 24" thrt., 1½" thru 1", arch jaw.
Punch & shear, Cleveland, 36" thrt.
Punch & s., Pels, type RBLUEF-26.
Punch, & s., No. 7 Ryerson-Kling, 72" thrt., 1½" thru 1", arch. jaw.
Riveter, Hanna, 18" thrt., 15" gap.
Riveter, Allen, 66" throat, 15" gap.
Riveter, stake, No. 6 Whiting, 48" thrt.
Rolls, angle bending, 6x6x⅝" K. & R.
Rolls, bending, 8'x⅜" N.-B.-P.
Sand blast, MacLeod, 36"x36".
Saw, cold, 24" Higley.
Saw, hack, Atkins 6"x6", b. d.
Shaper, 29" Cincinnati, b. g., b. d.
Shaper, 24" Gould & Eberhardt, b.d.
Shear, angle, L. & A., cap. 8"x8"x1⅛".
Shear, alligator, United, cap. 1½" sq.
Shear, guil., No. 3 H. & J., cap 2½" sq
Shear, bevel, Ryerson ⅝", m. d.
Shear, rot., No. 110½ Bliss 3/16" cap.
Shear, rotary, No. 6 Quickwork, ¼" capacity.
Shear, plate, type "D" L. & A., 60"x1".
Shear, plate, United, 10'x¼".
Straightener, bar, No. 3 K. & R. 8-roll.
Straightener, beam, No. 4 H. & J.
Straightening roll, 9-roll, rolls 3x42".
Testing machine, 100,000 lbs. Riehle.

FOR SALE BY

The Strong, Carlisle & Hammond Co., Cleveland, O., Detroit, Mich.

ENGINE LATHES.

14"x 6' LeBlond, l. c. g. and chuck.
14"x 6' Hamilton.
14"x 6' American, c. r. and t. a.
14"x 6' Porter, c. r. and t. a , l. c. g.
14"x 8' Monarch, c.r., stand. pattern.
16"x 6' South Bend, c. r., complete.
16"x 8' Lodge & Shipley, old style, c. r., q. c. g.
18"x 8' Prentice c. r., l. c. g., chuck.
18"x 8' American, 3-step cone, d. b. g., q. c. g.
18"x 8' Schumacher-Boye & Emmes, c. r., 5-step cone, s.b g., q.c g.
18"x10' Star, 4-s. c., s. g., with 16" 4-jaw ind. chuck.
24"x12' Lodge & Shipley, patent hd , compound rest, q. c. g., arranged for constant speed motor drive.
27"x12' Lodge & Shipley, patent hd., compound rest, q. c. g., arranged for constant speed motor drive.

TURRET LATHES AND SCREW MACHINES.

No. 2-A W. & S. g. h. tur. lathes.
No. 3-A W. & S. g. h. turret lathe.
No. 4 W. & S. g. f. h. universal turret screw machine.
26" Gisholt heavy duty turret lathe.
2"x24" Jones & L. g. h. flat turret.
No. 00 Brown & Sharpe auto., (3).
No. 0 Brown & Sharpe auto. (2).
No. 4 W. & S., p. h., a. c. & b. f.
No. 2 W. & S., p. h., a. c. and b. f.
No. 4 Warner & S., g. f. h., a.c. and b. f.
No. 3 Foster g.f.h. turret screw mch., with p. f. carriage and turret.
No. 55 Nat'l Acme 4-spdl. auto , (3).
2½" Cleveland model "A" auto. screw mch., with 5-hole turret.
1½" Cleveland model "A" auto. screw mch., with 5-hole turret.
No. 6 W. & S. g.f.h. screw machine, with p. f. turret.
18" Libby, factory rebuilt.
No. 2-G B. & S. automatics (2).
No. 2 B. & S. turret forming (2).

DRILLING MACHINES.

29" Barnes geared, camel back.
22½" Cincinnati, sliding head, friction back geared, power feed.
24" W. F. & J. Barnes, sliding head, back geared and power feed.
26" Aurora, slid. hd., b. g. and p. f.
2' arm Fosdick & Holloway plain radial, with t. a.
24" Baker heavy duty.
No 2-D Minster heavy duty, with compound table.
7" No. 1 Allen sgl. spdl. ball b., (3).
14" 4-sp. Leland-G., h. s., b. b. (2).
14" 3-spdl. Henry & W., h. s., b. b.
14" 4-spdl. Henry & W., h. s., b. b.

MILLING MACHINES.

No. 0 Bickett, hand, bench type (3).
Toledo hand milling machines.
No. 13-B B. & S. mfg. type, (2).
No. 1-B K. & T. "Milwaukee" plain, constant speed drive.
No. 1 Brown & Sharpe vertical.
No. 22 Garvin vertical, with circular milling attachment.
No. 1-Y Brown & Sharpe plain.

GRINDERS.

No. 1 B. & S. universal.
No. 3 B. & S. universal.
No. 2 B. & S. surface, (2).
No. 10 B. & S. plain.
No. 6-A Bryant internal.
No. 1 LeBlond cutter grinder.
Type "DK" Hisey-Wolf internal.
No. 11 B. & S. plain grinders.
Plain emery wh'l stand with column.

SHAPERS AND PLANERS.

16" Hendey friction, (2).
22"x22"x 5 Putnam planers (2).

METAL CUTTING TOOLS AND SQUARING SHEARS.

Higley cold saw.
3" new Davis cutting-off machine.

GEAR CUTTERS AND HOBBERS.

26" & 36" No. 3 Brown & S. auto.
No.18 G. & E. vert., for spur & spiral.
No. 13 Brown & Sharpe auto.
No. 12 B. & S., bevel.

MISCELLANEOUS.

Boring mill, 54" Bullard vertical, 2 swivel hds., rapid traverse, arranged for belted motor drive.
Centering mchs., sgl. sp. Cadillac. (2)
Cock grinder, 4-spindle No. 2 Turner automatic.
Hammer, Quickwork body hammer,
Tapper, No. 2-X Garvin vertical.

FOR SALE BY

McMullen Machinery Company, - - Grand Rapids, Mich.

Automatic, ⅞" Cleveland.
Automatics, No. 00 B. & S.
Band saw, Napier, metal.
Cut-off saw, No. 4 N. & B.
Drill, 31" Barnes, sliding head.
Grinder, No. 6-A Bryant.
Lathe, 2½x28 Greenlee, flat turret.
Miller, No. 2-H Becker vertical.
Pipe machine, 6" Merrill No. 6¼.
Press, Chicago scrap baler.
Press, No 3 Manville, d. a.
Presses, No. 6 Manville, pillar, (3).
Presses, No. 6B Manville, pillar, (2).
Shear, No. 14 Pettingell, rotary.
Shear, No. 2 W. F. Co. 36" gang.
Welders, No. 10-A Thomson vert. (7)

Ask for Complete List.

FOR SALE BY

Foster Machinery Company, 10203 Quincy Ave., Cleveland, O.

Angle shear, No. 2 Cleveland, 4x4x½" angle.
Boring mill, vertical, 42" Bullard.
Grinder, No. 60 Heald, cylinder.
Grinder, Greenerd, tool & cutter.
Grinder stand, Western No. 4, two 14" wheels.
Lathe, 16"x6' Monarch.
Lathe, 18"x8' Lodge & Shipley.
Miller, No. 00 Brown & S., hand.
Miller, No. 00 Owen, Fox type.
Press, No. 1 Consolidated.
Riveter, Hanna, 24" throat, 15" gap, ½" rivet.
Rivet hammers, No. 2-A, No. 4-A.
Shear, alligator, Canton, capacity 1½" square.
Squaring shears, No. 210-A Pexto, power.
Trolleys, I-beam, 1 & 2 ton.

FOR SALE BY

Allegheny Gear Co., - - 1011 Empire Bldg., Pittsburgh, Pa.

Blowers, pressure, Amer. Champ.
Broaching mche., No. 3 LaPointe.
Centering machine, No. 1 Whiton.
Crane, locomotive, 5-ton, 35' boom.
Drill, 2-D Colburn, 24" swing.
Drill, radial, 5' Reed-Prentice.
Forging machine, 2½" Ajax.
Furnaces, heat treating, annealing.
Gear cutter No. 3A Cincinnati.
Gear cutter, No. 12 Brown & Sharpe.
Gear tester, No. 1 spur gears B. & S.
Gear hobber, No. 12 Barber Colman.
Gear shapers, "Fellows" 6, 62, 612.
Gear generators, Gleason bevel, 11", 15".
Grinder, No. 20 Bryant chucking.
Grinder, Landis 12"x60" plain whls.
Grinder, No. 70 Heald internal.
Grinders, wet tool, emery, etc.
Hammers, steam drop, 3000, 2500, 2000, 1500, 1000.
Hammers steam forging 2500 double frame 1500, 1100, 800, single frame.
Hoists, portable, Crane.
Lathe, 22"x14' Bridgeford, g. h., t a.
Lathe, 32"x10' LeBlond, s. b. g., c. r., t. a.
Lathe, 36"x16' 6" Gleason, d. b. g. c. r., t. a.
Lathe, 26"x10' Walcott, d. b. g., q. c. g., c. r., t. a.
Lathe, 26"x9' Bridgeford, rev. gr hd.
Lathe, 46"x17' LeBlond, b. g., c. r.
Lathe, 18"x10' LeBlond, b. g., c. r.
Lathe, 16"x8' Hendey, s. b. g., q. c., c. r., t. a.
Lathe, 14"x6' American b. g., q. c., c. r., t. a.
Mill, No. 12 9" for variable sections.
Miller, No. 4 Brown & Sharpe univ.
Miller, No. 3 Pratt, hand feed.
Miller, No. 5 Becker, auto. feed.
Miller, No. 6 Becker 62", cone drive.
Miller, No. 4 Pedrick, portable, 12".
Miller, slab, 22"x22" 8' Ingersoll.
Motors, 1, 2, 15, 20, 30, 50 h. p., a. c.
Planer, Bickett 36"x36" 12", m. d.
Planer, 30"x30", table 22"x8', 1 hd.
Presses, Nos. 56 and 57 Toledo, trimming.
Presses, No. 74½ Bliss, trimming.
Sand blast, MacLeod, compl. unit.
Saw, cold, Newton 40" blade, motor drive.
Saw sharpener, No 11 Cochrane-Bly.
Shapers, 28" G. & E. Invincible.
Shaper, 24" G. & E. high duty.
Shapers, 20" Niles-Bement.
Shear, No. 4 Doelger Kirsten, alligator.
Shear, No. 0 Hilles-J., guillotine.
Shear, No. E Long-Alls, guillotine.
Shear, No. 7 Hilles-Jones, comb. punch & shear.
Slotter, crank, cone drive, table 25".
Turret lathe, 24" Gisholt.

Will quote special low prices.

SECOND-HAND MACHINERY

FOR SALE BY

Chas. Molitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.

LATHES.

14"x 6' and 16"x8' Hendey, with taper and draw attachment, (4).
24"-40"x12' Greaves-Klusman, gap.
24"x10' Lodge & Shipley, grd. hd.
24"x10' Carroll-Jamieson.
20"x10' LeBlond.
20"x10' Lodge & Shipley.
18"x 8' Morris, q. c. g., dbl. g., (2).
16"x 8' Pratt & Whitney, q. c. g., taper, relieving attachment.
16"x6' Lodge & Shipley, taper, draw & relieving attach.
$\frac{3}{4}$" & 1" Hardinge precision (6).

MILLERS.

24" Bullard vert. rapid production.
No. 1 Brown & Sharpe univ.
No. 2 B. & S. univ., vert. attach.
No. 2B Milwaukee univ., vert. att.
No. 2 Kempsmith universal.
No. 2 Cincinnati plain.
Nos. 3, 5, 5B Becker vertical.
No. 4 Oesterlein rapid production.
24" Bullard vertical turret.
24" Colburn vertical.
No. 3 Kempsmith, gr. box fd., plain.
Gooley & Edlund, production.
$2\frac{1}{2}$" Twin spline miller, P. & W.

SHAPERS.

24" Stockbridge, sgl. pul. drive, b.g.
21" Smith-Mills, sgl. pul. drive, b. g.
16" Smith-Mills, sgl. pul. drive, b. g.
16" Smith-Mills, arr. for motor dr.
20" Whipp b. g. crank.
16" Whipp b. g. crank.
16" Niles-Bement.

DRILL PRESSES.

Hilbert 3' radial, motor attached.
24" Baker Bros. heavy duty, (3).
24", 28" Aurora, Cincinnati, etc.
Sipp, with comp. tilting table, (2).
1-spindle Sipp, $\frac{3}{4}$" cap. (4).
4-spindle Sipp, $\frac{3}{4}$" cap. (3).
2-spindle Henry & Wright, 1" cap.
1, 2, 3, 6 sp. Leland-Gifford, $\frac{3}{4}$" cap.
Large variety 14", 16", 20" & 24".

GRINDERS.

Bryant internal and chucking, (6).
No. 1 Brown & Sharpe universal.
No. 13 Brown & Sharpe universal.
No. 2 Brown & Sharpe surface.
Cincinnati universal, 4"x57" table.
No. 2 Oakley universal.
No. 1 & No. 2 Norton universal.
4"x20" Norton cylindrical.
10"x30" Norton cylindrical.
No. 4 Gardner ball bear., 24" disc, (5).
40" Healy and Gardner, disc.
No. 65 Heald cylinder
No. 120 Gardner, ball bearing.
No. 6 Gardner, chuck & disc, 20x42" table, long. and cross feed.

SCREW MACHINES AND TURRET LATHES.

Jones & Lamson, single spindle.
No. 2 Warner & Swasey pl. hand.
No. 2 Brown & Sharpe semi-auto.
No. 1-G Brown & Sharpe auto.
No. 2-G Brown & Sharpe auto.
No. 10-G Brown & Sharpe auto.
No. 6 Foster, power long. & cross.
No. 4 Warner & Swasey universal.
1" & $1\frac{1}{4}$" cap. Acme, b. g., frict. h.
14" Gisholt, motor drive.
Nos. 0, 1, 2, 3 Foster and B. & O.
$\frac{3}{4}$", $\frac{7}{8}$", $1\frac{1}{4}$", 2" Cleveland auto.
$3\frac{1}{2}$" capacity Acme universal.
16"—18" Fox turret lathes, fric. hd.

PUNCH PRESSES AND SHEARS.

100-ton Lourie hydraulic.
21" Bliss, $3\frac{1}{2}$" stroke.
No. 33 Toledo.
No. 920 Toledo double crank.
No. 3 Consolidated incl. flywheel.
No. 104 Consolidated.
No. 3 Black & Johnson.
10' Niagara square shears, 20 ga.
$\frac{3}{8}$" capacity slitting shear.

GEAR CUTTERS.

No. 3 Barber-Colman.
No. 12 Barber-Colman.
No. 13 Brown & S., bevel & spur.
No. 1 Standard auto., (6).
Waltham automatic, (4).

MISCELLANEOUS.

Bolt cutter, 1" Landis.
Bolt cutters, $\frac{3}{4}$" Geometric (2).
Bolt cutter, $\frac{3}{4}$" Acme, double head.
Centering mchs., single and double.
Keyseater, No. 1 Baker.
Keyseaters, Nos. 1 & 2 Davis.
Reducing or straight, rolls, 6"x36".
Reducing rolls, 11"x22", dbl. g.
Steel corrugating rolls, 7"x26".

FOR SALE BY

Hill, Clarke & Co., Inc., - 156 Oliver St., Boston 9, Mass.

SHAPERS

15" Hendey, friction.
20" Smith & Mills, b. g. crank.
24" Hendey, friction.
28" Hendey, friction.

PLANERS.

17"x4' Whitcomb Mfg. Co.
22"x22"x5' Putnam.
22"x22"x5' Powell.
24"x8' Whitcomb-Blais, 2 rail heads.
30"x8' Whitcomb-Blais, 2 rail heads.
36"x16' D. W. Pond, 2 rail heads.

GRINDERS

24"x12"x12" No. 1 Diamond, auto. surface grinder.
No. 1 Diamond, wet tool.
20" Taylor & Fenn wet tool.
No. 12 Modern plain grinder.
6"x32" Norton, plain
No. 2 Brown & Sharpe, surface.
6"x30" Atlas M. T. Co., plain.

BORING MACHINE.

Niles 53" vertical, two swivel heads, late model, like new.

FOR SALE BY

Brownell Machinery Co., - 150 Pine St., Providence, R. I.

BORING MILLS.

No. 1½ Beaman & Smith horiz. drilling, tapping, boring and milling mche., 3½".
24" Bullard rapid production vertical turret lathe.

DRILLS

4' Prentice plain radial, s. p. d.
5' Reed-Prentice pl. radial, s. p. d.
25" Weigel sliding head.
3-spindle Cincinnati.

GEAR CUTTERS

No 3 Brown & Sharpe, spur, 26x8.
No. 4 Brown & Sharpe spur, 36x9, flywheel on cutter arbor.
No. 3-Heavy Brown & S. spur, 24x6.
No. 13 Brown & Sharpe spur and bevel, 18x4.

GRINDERS.

No. 10 B. & S. plain, 6x20.
No. 11 B. & S. plain, 4x30.
No. 12 B. & S. plain, 8x36.
No. 1 B. & S. automatic surface.
Garvin hand feed surface.
No. 2 B. & S. cutter & reamer.
No. 1 Norton tool & cutter.
No. 2 Norton tool & cutter.
Grand Rapids drill ½ to 1½.

HACK SAWS.

No. 7-K Atkins kwik-kut 8x8.
13x16 Peerless high speed.

LATHES.

12"x5' Vernon, q. c. g.
14"x6' Reed.
14"—19"x10' Carroll w. c. g., gap.
16"x8' Sidney.
16"x10' Filsmith, with gap.
20"x8' Roulsted.
20"x12' Reed.
20"x16' Beaman & Smith.
30"x20' Fitchburg.
No. 1 Ames bench precision.

MILLING MACHINES.

No. 1 B. & S. plain, open belt.
No. 2 B. & S. plain, b. g.
No. 3 B. & S. plain, b. g.
No. 2 heavy B. & S. plain.
No. 1½ Brown & Sharpe universal.
No. 2 Brown & Sharpe vertical sp.
No. 1-H B. & S., vertical attach.
No. 3 B. & S., vertical milling att.
No. 3 Brown & Sharpe universal milling attachment.

PLANERS.

48"x72"x20' Gray, 4 heads.
26"x30"x14' Whitcomb-Blaisdell.
30"x30"x8' Detrick & Harvey open side.

SCREW MACHINES.

No. 0 B. & S. wire feed hand.
No. 2-F B. & S. hand, constant spd.
No. 4 B. & S. plain head, wire feed.
No. 6 B. & S. geared friction head.
No. 6 P. & J. automatic chucking.
3x36 J. & L. flat turret.

MISCELLANEOUS.

Broaching mche., No. 2 Lapointe.
Marking mche., No. 6 Martin, hand.
Shaper, 15" Potter & Johnston.
Slotter, 12" Bement Miles.
Swaging mche., No. 1 Langelier.
Swaging mche., No. 2 Standard.
Tapper, No. 2 Garvin vertical.

MAGNETIC CHUCKS

50—Brand new Taft-Peirce Rectangular Magnetic Chucks 8x10, for 110 v., d. c., suitable for No. 2 surface grinders.

SECOND-HAND MACHINERY

FOR SALE BY

A. F. Strafer, . . . 30 Church St., New York City

BORING MILLS, VERTICAL.

10′—16′ Niles extension type, b. d.
96″ Betts, d. c. motor drive.
90″ Niles, friction feed, b. d.
42″ Baush, geared feed, d. c., m. d.
72″ Niles-Bement-Pond, heavy.
60″ Baush, heavy, quick change fds. 10 h. p., d. c. motor drive.
42″ Bullard, 1 turret and 1 side head.

BORING MILLS, HORIZONTAL.

6″ bar, Bement Miles, floor type.
5″ bar, Sellers, floor type.
3″ bar, Betts, knee type.
6″ bar, Barrett horizontal cylinder.

DRILL PRESSES.

7′ Baush tapping attach., box table.
6′ Reed Prentice, latest type, m. d.
6′ N.-B.-P., semi-universal, m. d.
3′ Carlton, radial, belt driven.
No. 310 Baker, high duty, cap. 2½″.
28″ Mechanics, sliding hd., upright.
6-spindle, 20″ Barnes gang drill.
Style "F" hvy. pattern Baker upright

GEAR CUTTERS.

No. 5 Brown & Sharpe automatic.
No. 4 Brown & Sharpe aptomatic.
Gould & E. 24″—36″ spur and bevel.
No. 2½ Bilton automatic gear cutter.

GRINDERS.

18″x96″ Norton pl., arr. for motor dr.
10″x72″ Norton plain, overhead, belt drive, complete equip.
12″x48″ Modern pl., standard equip.
10″x36″ Norton plain, belt drive
6″x32″ Norton plain.
No. 11 Brown & S. plain, 6″x32″.
No. 1 Landis universal, belt drive.
12″x60″ Landis universal, belt drive.
No. 2 Landis univ., 12″x32″, belt dr.

HAMMERS.

1500 lb. N-B P. steam hammer.
1400 lb. Chambersburg steam.
600 lb. Erie steam hammer.
500 lb. Bradley upright helve.
No. 4 type "I" Nazel motor drive.
No. 4-B Nazel hammer, motor drive.
No. 3-B Nazel, arranged motor dr.
500 lb. Standard, automatic drop.

TURRET LATHES.

Gisholt 24″ modern, motor drive.
Gisholt 28″, modern, belt drive.
Jones & Lamson, 3½″x36″ bar equip.
Greenlee 2½″x26″, chuck equip.
Steinle 24″, new.
Bardons & O., No. 4, wire feed.

ENGINE LATHES.

100″x50′ N.-B.-P., modern, m. d.
52″x24′ Putnam, triple grd., belt dr.
50″x30′ Pittsburgh, q. c., latest type.
50″x36′ Bement M., tr. grd. belt dr.
42″x42′ Fitchburg, triple grd., b. d.
42″x21′ N.-B.-P., triple grd., b. d.
38″x22′ Pittsburgh, triple geared.
36″x33′ Putnam, triple grd., mtr. dr.
36″x16′ N.-B.-P., new, triple geared.
36″x23′ Fitchburg taper att., belt dr.
32″x20′ Fitchburg, taper att., belt dr.
30″x20′ Fitchburg, belt drive.
26″x16′ Prentice, geared head, q. c.
24″x28′ Fitchburg, taper att., belt dr.
21″x 8′ R. K. LeBlond, heavy duty.
17″x6′ LeBlond, rapid production.

MILLING MACHINES.

No. 4 Cincinnati plain, cone type.
No. 3-B Brown & S. hvy, plain.
No. 3 LeBlond universal, cone type.
No. 3 Kempsmith universal, comp.
No. 2 Y Brown & Sharpe, plain.
No. 2-B Brown & Sharpe, heavy.
Planer type, Beaman & Smith No. 2.
Mfg. type, B. & S. heavy No. 13.

PLANERS.

120″x144″x25′ Sellers.
120″x120″x25′ Niles, motor drive
72″x72″x30′ Sellers.
(See advertisement page 113)
76x76″x16′ Pond.
36″x36″x10′ Gray type.
30″x 8′ D. & H. openside.
24″x24″x6′ Gray.

PUNCHES AND SHEARS.

Alligator, No. 4 Doelger & K., 5″ cap.
Gate shear, H. & J. 74″, 1⅛″ cap.
Gate shear, 74″ H. & J., ⅝″ cap.
Multipunch, L. & A. 104″, 250 tons.
Schatz triple comb., 1½″ capacity.
No. 6 H. & J., 60″ thr., a. c., m. dr.
No. 4 H. & J., dbl., 48″ thr., m. d.
Angle shear, H. & J., 6″x1″ cap.
Rotary, Gray No. 1—3/16″ cap.
Rotary, No. 6 Quickwork, ⅜″ cap.

ROLLS.

20″ Hillis & Jones, cap. ⅜″ plate.
10″ Southwork, cap. 1½″ plate.
7′ Sellers, cap. ⅜″ plate.
Straightening, H. & J. 4′ and 6′.

MISCELLANEOUS.

Bolt threader, 2″ Acme.
Bolt threader, 2″ Standard, 2 h.
Core wire straightener, 1/16″ to ⅜″.
Moulding machines, Champion.
Surface plates, 12″x18″ B. & S.
Tapping att. Errington, 1″ cap.

FOR SALE BY

M. A. Wertman, - - 505 Superior Bldg., Cleveland, Ohio

Boring mill, No. 5 Defiance horizontal, guaranteed.
Bulldozer, No. 24 W. & W., cut gears, excellent condition, m. d.
Grinder, disc, No. 120 Gardner b. b. combination.
Grinder, double ringwheel, Badger, automatic feed.
Press, No. 57 Consolidated, s. s., m. d.
Press, 77½ Bliss, s. s., tie rod frame.
Turret lathe, No. 6 Brown & Sharpe, wire feed, complete, A No. 1.

FOR SALE BY

Herman L. Winterer, 943-53 N. Front St., Philadelphia, Pa.

LATHES.

43"x17' 4½" Bement-Miles.
37½"x14' Johnson d. b. g., q. c. f., t. a.
32"x12' Pittsburgh, heavy duty, q.c.g.
27"x12' Bullard.
26"x11' Wickes, q. c. g.
25"x10' Niles, q. c. g.,
25"x14' Hendey, q.c.g., taper attachment, oil pan, (2).
24"x14' Porter.
21½"x8' LeBlond.
20"x8'6" Walcott, d. b. g., c. g., (2).
19"x10' Draper, patent head.
18"x 8' Davis, q. c., d. b. g.
18" x 7' Chard, d. b. g., semi q. c. g.
18"x6' to 8' lathes, (6).
And many others.

TURRET LATHES.

3½x28" Pond, triangle.
3x36" Pratt & Whitney, hollow hex.
20x7' 6" Pratt & Whitney, back grd.
20x7' Bridgeport, 2½" h. s.
19"x7' Fay & Scott, back grd.
No. 22½ Garvin Monitor.
No. 3 Kempsmith.
14"x 6' Warner & Swasey.
16"x6' Johnson, back grd.
No. 3 Bardons & Oliver back grd.
14½"x5' 3" Pratt & Whitney, (2).
No. 3 Foster Kimball.

DRILL PRESSES.

42" Gang radial, s. p. speed box.
40" Barnes horizontal radials, (2).
36" Bickford radial, circular base, motor driven.
26" Rockford, tapping attachment.
28" Rockford, q. c. g. feed, (2).
34" Barnes, s. h., geared face, comp. table.
24" Sibley & Ware, sliding head.
Drill presses, assorted sizes.

MILLING MACHINES.

No. 5 Cincinnati, table 9½x50½".
No. 15 Garvin, table 12x42".
No. 3 Becker-Brainard, new model, q. c. g., vertical attachment.
No. 3 Hendey-Norton, q. c. g.
No. 5-C Becker vert., rotary table.
No. 1 Milwaukee plain.

PLANERS AND SHAPERS.

12'x10'x25' Sellers planer, 4 heads.
48"x37"x9' Sellers, 2 heads.
48" Morton draw-cut shaper.
16" Potter & Johnston crank shaper.
15" Lodge & Davis shaper.
15" Potter & Johnston shaper.
14" Warren shaper.

MISCELLANEOUS.

Boring mill, car wheel, 60" Newton.
Boring, drilling and milling machine, 17½" Bement Niles horizontal.
Boring mill, No. 1 Sellers, horizontal, 2½" bar.
Boring mill, No. 3 Binsse, horizontal, 2½" bar.
Centering mche., 5" Whiton, dbl. sp.
Centering mche., 4" Whiton, dbl. sp.
Grinder, 13½"x5' Landis universal.
Grinder, disc, No. 17 Besly.
Hammer, 15 lb. Bradley helve.
Hammer, 40 lb. Bradley, helve.
Hammer, 60 lb. Hotchkiss.
Hammers 60 lb. Bellefonte upright, 2
Keyseater, 18" stroke Morton.
Pipe machine, 4" Cox.
Molding machine, 24" Taber, with roll over.
Punch presses, all sizes, (55).
Punch, multiple, No. 5 H. & J., gate pat., 86".
Punch & shear, No. 2 H. & J., dbl. end, 20" th. cap., 1½" in 1".
Punch, No. 2 H. & J., 15" th., arch. jaw, 1½" in 1".
Punch, horiz., L. V., grd., cap. 1".
Punch & shear, Industrial Wks. d. e., capacity ⅝" in ½"; shearing ⅝"x6".
Riveter, air, 6' gap Allen, cap. 1½".
Slotter, 14" Niles.
Tooth rounding mche., Schuchardt & Schutte.

Large assortment of General Machinery. Send for complete Price List.

SECOND-HAND MACHINERY

FOR SALE BY

Cyril J. Bath & Co., E. 70th & Mchy. Ave., N. E., Cleveland, O.

BORING MILLS—VERTICAL.

60" Niles, 2 swivel heads and one internal boring head.

42" Baush, 2 swivel heads, 75$.

BORING MILLS—HORIZONTAL.

No 36 Landis, floor type, 3½" bar, 80$.

5" bar Beaman & Smith.

Morton floor type boring, drilling and slotting machine.

DRAW BENCHES.

15,000 lbs. to 25,000 lbs. Waterbury-Farrel, United Engineering and Standard; 20" draw, with 18' extensions for mandrels, heavy cast iron; 85$

DRILLS.

4-spindle 20" Barnes, 85$.

5' Bickford, radial.

No. 1, 8' wall radial.

DRILLS—UPRIGHT.

24" Cincinnati, slid. hd., fric. bk. grs.

28" Cincinnati, sliding head, 80$.

32" Cincinnati, with tap. att., 75$.

24" No. 25 Foote-Burt, 90$.

FORGING MACHINES AND BULLDOZERS.

4, 5, & 25 Bulldozers.

1" & 2" Forging machines.

250-ton Mesta steam hydraulic, 85$.

GRINDERS.

10x36" Modern univ., and parts, 70$.

84" Diamond surface, 85$.

18x96" Norton plain, 75$.

Mammoth shear blade cap. 100" long

HAMMERS.

100-lb. Bradley, helve, 75$—90$ (3).

350 lb. to 8000 lb. steam forging.

800 lb. to 4000 lb. board and steam drops.

LATHES.

16" to 20" tool room, various lengths.

25"x12' LeBlond heavy duty.

27"x22' Bridgeford, pl. turning, m d.

30"x16' Lodge & Shipley selective geared head, arranged m. d.

30"x22' Bridgeford, pl. turning, m.d.

32"x18' Schumacher, cone head, 60$.

32"x32' Bridgford, comp. rest, m. d.

48"x26' Bridgeford, grd. hd., t. a., 85$.

60"x34' Houston, Stanwood & Gamble, geared head, motor drive.

MILLING MACHINES.

Style "B" Gooley & Edlund, 80$. (2).

No. 3 Brown & Sharpe, plain, 65$.

No. 3B Brown & S., pl., heavy, 60$.

Becker miller, model "C," table 14"x54", motor drive, 85$.

No. 4 Cincinnati high power miller.

PLANERS AND SHAPERS.

30"x30"x8' Gray, single head, 80$.

48"x48x18' Pond, 4 heads, heavy duty.

72"x72"x16' Betts, four heads, 90$.

60"x48"x16' Pond, 2 hds., old style, light pattern, 50$.

20" American crank shaper.

PIPE MACHINES.

No. 9½ Merrill. capacity 2½" to 8".

2" & 4" Jarecki, with dies and countershaft, late models, 85$.

PUNCHES AND SHEARS.

6x6 Hillis & Jones angle shear.

No. 26 Whitmore slitting shear.

54" gap American ship punch, capacity 1" thru 1", 70$.

84" throat, Long & Allstatter capacity about ⅝" thru ⅝".

Kling Bros. horn press, 60" horn, flywheel 50" dia., 6½" face.

48" throat No. 4 Southwark, capacity 2"x1½".

60" throat No. 5 Southwark, capacity 1⅝"x1½".

No. 6 Quickwork rotary shear, capacity up to 1½" plate.

36" throat Lennox rotary shear, capacity about ⅝" plate.

TUMBLING BARRELS.

Several sets 18"x48" chill lined square, with roller bearings and exhaust.

TURRET LATHES AND SCREW MACHINES.

21" Gisholt, standard model, 70$.

3"x36" Jones & Lamson.

No. 3A Warner & Swasey.

MISCELLANEOUS.

Acetylene generator.

Blower, No. 4 Root, motor drive.

Blower, American, 9' fan, mtr dr., 85$.

Boring machine, for cylinders, portable, 4" bar, 7" feed, arranged for motor or engine drive, 75$.

Blowers, Sturtevant, mtr. dr., 85$, (2).

Cold saw, 48" Newton.

Gear cutter, 36" Gould & E., 60$.

Press, No. 66 Consolidated, 4" str.

Pyrometer, Brown.

Slotter, 48" Niles-Bement-P., mtr. dr.

FOR SALE BY

The Hess-Schenck Company, 3868 Hamilton Ave., Cleveland, O.

TURRET LATHES.

No. 4 W. & S. universal turret lathe.
No. 2-A Warner & Swasey universal turret lathe.
2" Model B Cleveland automatic.
No. 55 National Acme multiple spindle automatic, motor drive.

DRILL PRESSES.

14" Allen, h. s., b. b.
2-spdl. Allen, h. s., b. b.
4-spdl. H. & W., h.s., b.b., model K.
4-spindle Avey, h. s., b. b.
26" Barnes, slid. hd., bk. grd., p. f.
36" Fitchburg, slid. hd., bk. grd., p.f.

PLANERS AND SHAPERS.

26"x26"x8' Gray planer.
20" Hendey shaper.
24" American Tool Works back grd. crank shaper.

PRESSES.

No. 2 Niagara bench press.
No. 3 Rockford o. b. i. power press.

MILLING MACHINES.

No. 2-A Milwaukee single pulley dr. plain miller, with vertical attach.
No. 6 Whitney hand miller.
No. 1½ Hendey plain miller.
No. 2 Cleveland single pulley drive universal miller.

GRINDERS.

No. 205 Rivett radial grinder.
10x52 Landis plain, self cont.
10x25 No. 2 Bath universal.

LATHES.

12"x5' Seneca Falls, taper attach.
21"x10' LeBlond heavy duty, compound rest.
14"x6' Hendey, tie bar head, quick change gear, taper attachment, relief. attachment, oil pan.

MISCELLANEOUS.

Bolt cutter, 1½" Acme.
Die sinker, No. 2 Pratt & Whitney.
Floor boring machine, No. 35, 3½" bar Landis, 6'x9' base plate.
Forcing press, 50-ton Lucas, power, motor drive.
Spline milling machine, 4" P. & W.
Tapper, ⅝" Rickert-Shafer.

FOR SALE BY

Jones Machine Tool Co., 528-532 E. Front St., Cincinnati, O.

LATHES.

16"x 6' LeBlond, q. c. g.	$ 375.	26"x12' Reed, l. c., t. a.	$ 500.
16"x 8' Hendey, q. c. g. & t. a.	975.	30"x12' Houston Stam., q. c. g.	750.
18"x10' Reed Prentice, grd. hd.	775.	30"x16' Lodge & Davis	850.
20"x10' Lodge & Shipley, q.c.g.	850.	32"x12' Boye & Emmes, q. c.	1450.

MILLING MACHINES.

No. 1½ Valley City universal	$ 500.	No. 3 Brown & S. pl., (2), ea.	$ 800.
No. 3 Cincinnati plain	950.	No 3 LeBlond plain	900.
No. 2 Cleveland, s. p drive	750.	No. 3 B. & S. vert., s. p. drive	1250.

RADIALS AND DRILL PRESSES.

3' Carlton sensitive	$ 300.	24" Hoefer, sta. head	$ 175.
48" Bickford, cone drive	475.	24" Rockford, sliding head	225.
72" Niles, cone drive	750.	30" Cincinnati, sliding hd., t. a.	325.
72" Dreses, motor drive	1500.	42" Bickford, stationary head.	225.

PUNCH PRESSES AND SHEARS.

No. 2 Niagara	$ 140.	No. 6 Whiting, single end	$ 475.
No. 3 A Willard, o. b inc.	175.	No. 4 Bliss	450.
No. 18 Bliss, o. b. inc.	175.	No. 85 Bliss, d. b. g.	1500.

PLANERS AND SHAPERS.

24"x 6' Powell 1 head	$ 600.	16" Smith & Mills shaper	$ 325.
30"x 6' Gray, 2 heads	850.	25" Smith & Mills, b. g.	875.
49"x36"x12' Cincinnati, 2 hds.	2300.	24" Kelley	800.

MISCELLANEOUS

Bolt cutters, 1" & 2" Acme.		Gear hobber, Barber-C. No. 12	$1075.
Boring mill, 42" Bullard	$1200.	Grinder, 10x50 Norton	475.
Boring mill, 10' Niles	2500.	Hammer, steam, 800 lb. Niles	800.
Chain hoists, various sizes, (50).		Keyseater, No. 2 Baker	475.
Gear cutter, 48" B. & S. No. 4.	750.	Slotter, 10" Niles vertical	500.
Gear hobber, 24" S. & S	550.	Square sh., 62" Robinson 12 g.	475.

Write for our latest Stock List.

FOR SALE BY

Marr-Galbreath Machinery Co., 58 Water St., Pittsburgh, Pa.

Air compressor 4"x5" Caldwell, 2 cyl.
Angle & bar bender, No. 9 Buffalo.
Angle rolls, K. & R., 6x6x⅜".
Arbor presses, Nos. 00 & 1 Atlas (5).
Blowers, pos. pressure, 5" outlet.
Bolt cutters, 1", 1½", 2", 3" & 4".
Bolt cutter, 1½" Reliance, dbl. head.
Bolt cutter, 1½" Acme, 4-spindle.
Bolt cutter, 2" Landis, 1-spindle.
Boring mills, 96" Pond, 2 heads.
Boring mill, 42" Colburn 2 hds., mtr.
Boring mills, Rockford, 2" & 3" bar.
Brake, 4' D. & K., "steel", hand.
Brake, 8'x20 ga. Robinson, hand.
Brake or press, 10' Robinson, toggle.
Bulldozers, Nos. 1, 4, 5 & 7 W. W.
Bulldozer, No. 7 Ajax.
Comp'r, 2500 cu ft. L. D.G., a. c. mtr.
Crane, 40-ton Morgan, 67' span, 4 motors, 220 volts, d. c., new.
Cutting-off mch., 6" Newton, int. m. d.
Drill, radial, 5' Prentice, t. a., m. d.
Drill, radial, 4' American, gear box.
Drills, radial, 3', 4' & 5' Bickford.
Drill, 8-sp. Baush, rd. hd., belted.
Drill, heavy gang, 4-sp., 12" table.
Drill, 20" Silver, b. g.
Drill, 22" Aurora upright.
Drill, 24" Aurora, sliding head.
Drill, 24" Barnes, b. g.
Drill, 30" Barnes, sliding hd., b. g.
Exhausters, No. 8 Buffalo.
Forging mch., 1½" Acme, iron bed.
Forging machine, 3" Acme, steel bed.
Gear cutter, No. 11 universal Dwight
Gear cutter, No. 3 S. & C., auto. 1x1".
Gear hobber, No. 4 Farwell, A-1.
Generator, 100 k. w., 240 v., d. c., connected to horiz. steam engine.
Gen'r, 500 k. w., 3/60/2300 to turbine.
Generator, 85 k. w., 240 v., d. c., connected to horiz. steam engine.
Grinder, No. 60 Heald internal.
Grinder, plain cyl., No. 12 Modern.
Grinders, No. 1 Cinti univ., c. & t.
Grinder, 20" Taylor & Fenn, wet tool.
Grinder, Yankee drill, style A.
Hammer, 100 lb., single fr., steam.
Hammer, 2000 lb. Erie, single frame.
Hammers, 40, 80, 100 lbs. Bradley.
Hammer, 125 lb. Bradley upr. strap.
Lathe, 42"x32' Am., gd. hd., m. d.
Lathe, 38"x16' New Haven, rag. blks.
Lathe, 36"x14' Alliance, g. h., m. d.
Lathe, 24"x13' Chard, q. c. g., t. a.
Lathe, 24"x10' Pgh., q. c. g., t. a.
Lathe, 18"x12' L. & S., q. c. g., t. a.
Lathe, 18"x10' Porter, s. b. g., c. r.
Lathe, 18"x 8' Lodge-S., g. h., pan.
Lathe, 16"x8' Branford, pl. change.
Lathe, 16"x6' Flather, taper att., ch.
Lathe, 15"x6' South Bend.
Lathe, 14"x6' Monarch, plain change.
Lathe, 14"x6' Am. brass lathe, ck.
Lathe, 13"x6' South Bend, m. d.
Lathe, 12"x8' Reed-P., g. h., s. p. d.
Lathe, 24"x10' Schumacher & Boye, taper attach.
Lathe, speed, 11"x4' Prentiss, t-rest.
Miller, No. 3½ Fox, hand, 24"x6"x14½".
Miller, No. 0½ Cin. pl., 18"x6"x15".
Miller, No. 2 LeBlond, pl. ind. hd.
Miller, Hendey Lincoln No. 2½.
Miller, Knight duplex, tbl. 8½"x32".
Miller, No. 0 Kempsmith universal.
Miller, vertical No. 0 & 1 Bickett.
Miller, vertical, Becker "C" & 2.
Miller, bench, No. 3 Burke.
Millers, hand, Whitney, (2).
Motors, 3½ h. p., 220 volts, d. c., 450/1800 rev., (2).
Motor, 2 h. p., 1/60/110/1200.
Pipe machines, 8", 6", 2" Oster.
Pipe machine, 6" Jarecki, s. p. d.
Planer, o. s., 72"x72"x18', 3 hds., m. d.
Planer, 48"x48"x10' Pond, 2 hds.
Planer, openside 42"x42"x16', 3 hds.
Planer, Powell, 42"x42"x16', 4 hds.
Planer, 26"x26"x8' Niles, 1 head.
Planer, 24"x24"x 5' New H., 1 hd.
Press, No. 1 Toledo, o. b. i., for mtr.
Press, No. 2 V. K. & V., 2300 lbs.
Press, 7½ Bliss, 12" stroke, tie rod.
Press, No. 10 Bliss o. b. i., bench.
Press, No. 11 Perkins, pl. trim., 4" str.
Press, No. 59 Toledo, side shear.
Press, No. 62 Consolidated horning.
Presses, foot, kick, (6).
Punch, No. 124-A Niagara, 15"t., ½x¼".
Punch & shear, No. 51 Beloit.
Punch & s., No. 2 L. & A. 30" tht., a. j.
Punch & shear, 14" & 72" throat.
Riveter, ⅜" Shuster, style A.
Riveter, 80-A Grant, cap ⅜".
Riveter, Allen, jaw. 36x20x1⅛" rivets.
Riveters, 3-A & 5-A High Speed.
Saw, Burke, 12" blade.
Saw, cold, No. 18 Wagner, 16" saw.
Saw, cold, No. 11½ Higley, 14" saw.
Screw mch., No. 2 W. & S., pl. hd.
Shaper, 25" Smith & Mills, b. g.
Shapers, 24" G. & E. old style, good.
Shaper, 16" Cincinnati, b. g. crank.
Shear, single end, 9" throat, cap. 3½" round, motor drive, new.
Shear, Quickwork, Nos. 3 & 6 m. d.
Shear, Niagara 16-A ring & circle.
Shear, rotary, ¼" Lennox, 8' gap.
Shear, squaring, 30" P. S. & W., foot.
Straightener, No. 2 Kane & Roach.
Testing mchs., 100,000, 200,000 lbs.
Tumbl'g barrel, Globe, 18"x15", new.
Turret, 24" Gisholt, 6½" h. a., t. a.
Turret, vert. 30" Bullard & Colburn.
Turret lathe, 2x24" J. & L.
Turret lathe, No. 1 Bardons & O.
Turret lathe, 28" Gisholt, t. a.
Turret lathe, P. & W. bench.
Upsetter, 3" Acme, steel bed, A-1.
Valve tapper, 4" Pottstown, 3-w., m. d.

FOR SALE BY

Bennett Machinery Co., - 30 Church St., New York City

Cold saw, 22" blade, Gleim.
Drills, 24" 28" and 32" Rockford, Barnes and Lodge & Davis.
Lathe, 16"x 8' Davis.
Lathe, 18"x 8' Bell heavy duty.
Lathe, 24"x12' McCabe.
Lathe, 28/48"x14' Harrington, gap.
Lathe, 30/52"x12', with 24" removable gap.
Miller, No. 3 Hendey univ.
Pipe machines, 8 & 10" Cox.
Planer, 54"x12' Pond, 4 head, belt.
Plate planer, 18" Niles.
Radials, 6' Pond, 4' Dreses.

FOR SALE BY

Tuber, Velick & Co., Inc., - - 628-630 W. Lake St., Chicago, Ill.

Telephones: Monroe 4199-6813. No Branches

PUNCH PRESSES.

No. 3 Niagara, (3).
No. 4 American Can.
No. 5 American Can (2).
No. 15 Torrin Wold.
Perkins punch presses, ½" str. (20).
Long & A. horn punch, cap. 1½x1.
Swaine geared, (2).
No. 5 Rockford, (2).
Bliss bench presses, (5).

DRILL PRESSES.

14" Excelsior.
20" b. g., p. f., new, $130.
20" drill presses (40), each $40.
26" Weigel.
30" Reed-Prentice.
Demco high-speed drills.
Bench type drills.
3' American radial.
3½' Hilbert radial.
Drill presses, 1-2-3-4 sp. Avey, h. s.

MILLING MACHINES.

No. 4 LeBlond plain.
No. 4 LeBlond univ., sgl. pulley dr.
No. 1 Cincinnati universal.
No. 2 Cleveland universal, s. p. dr.
A number of hand millers.

LATHES.

16"x 6' Hamilton, q. c., (2).
16"x 6' Sidney, q. c., (2).
17"x 9' Chard, q. c., (9).
18"x 6' Lehmann, q. c., (2).
24"x10' Canadian, q. c., d. b. g., (3).
22"x10' Cisco, q. c.
26"x12' Prentice.
10", 12" and 14" Shepard screw cutting, quick change.

PLANERS.

30"x30"x12' Niles-B.-P., 2 heads.
36"x36"x 7' Flather, 2 heads.

SCREW MACHINES.

Brown & Sharpe automatic.
Lockers, steel, single, (1,000).
No. 2 Smith, hand.
Pratt & Whitney, hand, (3).
Nos. 1, 2, 3 and 4 Foster screw mchs.

GRINDERS.

Bath universal, with magnetic chk.
La Salle surface, with magnetic ck.
Gardner No. 6 disc grinder.
No. 14 Besly, disc.
Emery grinders, $2 and up.

WOOD-WORKING MACHINERY.

Band ripsaw, West Side.
Boring mills, Andrew, (2).
Moulders, 8" Yates C-4, (2).
Redrier.
Shapers, Advance dbl. spdl., 5 h. p., a. c. motor in base, (6).
Saw tenoners, Pettingell.
Shapers, double spindle, Whitney and Fay.
Swing saws, Porter, (4).
Saw table and jointer combined, portable.

MISCELLANEOUS.

Buffers, U. S. and Westinghouse, 5 h. p., b. b.
Hack saws.
Motors, 75 h. p. G. E., a. c., slip ring, 600 r. p. m., (2).
Motors, a. c. and d. c.
Pressed steel bench legs, (1,000).
Pressed steel hangers and bearings, all sizes.
Pressed steel stools, with backs.
Punch press, No. 3 Thomas.
Punch press, No. 4 V. & K.
Saw mandrels, $3.
Shaper, 15" Niles.
Thread hobber, Pratt & Whitney.
Time clocks, International.
Woodworking machines.

Leather belting. Pulleys, shafting and hangers.

FOR SALE BY

Clark Machinery Co., 1235-45 St. Clair Ave., Cleveland, O.

Bolt threader, 2-spindle Acme, 1½".
Boring mill, No. 2 Rockford.
Chucking grinders, No. 6 Bryant.
Lathes, 14" to 24".
Millers, vertical. Becker Nos. 2 3-5.
Planer, 42"x42"x10' Gray, 2 heads.
Planer, 26"x26"x 7' Gray, 1 head.
Planer, 28"x28"x 8' Gray, 1 head.
Press, No. 69 Bliss, d. act., inc., grd.
Turrets, Warner & S. Nos. 4 & 6.

Machine tools for every purpose. Send us your inquiries.

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road, - - - N. S., Pittsburgh, Pa.

Arbor press, No. 24 Atlas.
Blower, No. 5 Champion, 6⅝" outlet.
Blower, Amer. pressure, 461 cu. ft.
Boring mill, No. 44 D. & H., floor type, 3½" bar.
Boring mill, Binsse horiz., 4" bar.
Boring mill, Niles horiz., 4½" bar.
Boring mill, 34" Colburn, 1 head.
Boring mill, 36" Bullard, vert., 2 hds.
Brake, 60" D. & K., 14 gauge, m. d.
Buffer, 2 h.p. U. S. Elec., 220-3-60.
Centering mch., 4" Whitton, S. H. 2-sp.
Drill, 13" Fosdick 6-spdl., m. d.
Drill, 16" Fosdick, 6-spdl., m. d.
Drill, Reed 4 spindle, cap. ½".
Drill, Baush 8-spindle, No. 3 taper.
Drill, No. 13 Natco, 16-sp., No. 1 tap'r.
Drill, 21" Cincinnati, sliding head.
Drill, 24" Hoefer, sliding head.
Drill, 36" Snyder, sliding head.
Drill, No. 310 Baker heavy duty.
Drill, Model "F" Turner auto. tur.
Drills, 20" & 24" Foote-Burt, h. d.
Gear cutter, 36"x10" G. & E., s. p. d.
Generator set, 250 k. w. G. E., 230 v., d. c. connected 400 h. p. Erie-Ball.
Generator set, 50 k. w., 230 v., d. c. generator, connected 90 h. p. Bruce-MacBeth gas engine.
Grinder, Oliver drill, m. d., cap. ½".
Grinder, No. 70 Heald internal.
Grinder, No. 3 Brown & S. univ.
Grinder, 6"x32" Norton plain.
Grinder, 12"x30" Modern plain.
Grinder, Besly No. 8-20-L, dbl. disc.
Grinder, W PL New Yankee, cap. 2½".
Hammer, 80 lb. Bradley cush. helve.
Lathe, 12"x 6' Seneca Falls.
Lathe, 12"x10' Davis tool r'm, q.c.g.
Lathe, 14"x 6' Hendey, g. h., m. d.
Lathe, 14"x 6' Seneca Falls, q. c. g.
Lathe, 14"x 8' Whitcomb-Blaisdell.
Lathe, 16"x 8' Bradford, q. c. g.
Lathe, 17"x8' Sidney, hvy. duty, q.c.g.
Lathe, 18"x8' L. & S., q. c. g., m. d.
Lathe, 18x10 Whitcomb-B., g. h., s.p.d.
Lathe, 24"x10' Boye & E., g. h., m.d.
Lathe, 24x10 Whitcomb-B., g. h., m.d.
Lathe, 24"x22' American, g. h., m. d.
Lathe, 26"x12' Bridgeford hvy. duty.
Lathe, 27"x26' Sc... her-B., q.c.g.
Lathe, 30"x12' J..., triple grd.
Lathe, 30"x16' New Haven, p. c. g.
Lathe, 34"x12' Lelblond, triple grd.
Lathe, 42"x31' Pond, triple geared.
Miller, No. 1 Knight Drill.
Miller, No. 1½ American plain.
Miller, No. 2 Cincinnati, plain, v. a.
Miller, No. 3 Hendey plain.
Miller, model "C" Becker, vert.
Millers, Sellers, Lincoln type, (2).
Miller, model "H" Becker, mfg. type.
Pinion rougher, 36-BM Gould & E.
Pipe machine, B. & K., ½" to 2" m. d.
Pipe machine, Merrill, 1½" to 6".
Pipe machine, 8" Cox, cap. 2½" to 8".
Pipe mch., 10" E., C & B., 2½" to 10".
Pipe machine, Merrill, 2½" to 12".
Pipe machine, Cox, cap. 4" to 12".
Pipe machine, Cox, cap. 8" to 16".
Planer, 60"x60"x16' Betts, 3 heads.
Planer, 36"x36"x8' Cincinnati, 1 hd.
Planer, 72"x72"x18' D. & H. open-side, motor drive.
Press, Lucas 15-ton forcing.
Press, No. 19 Bliss, o. b. i., 2" str.
Press, No. 5-A Willard, o.b.i., 2" str.
Press, No. 87 Niagara, screw.
Presses, Nos. 61 & 62 Bliss, o.b., f.w.
Press, Ferracute DD2, o. b. i., cam.
Press, No. 10 Bliss, reducing, 4" str.
Press, No. 78½ Bliss straight sided.
Press, No. 305 Bliss geared, 8" str.
Press, 1½ Bliss toggle drawing.
Punch, Royersford d. e., cap. 1"x¾", arch. jaw, 18" throat.
Punch, EF Cleveland, 48" thrt., m.d.
Punch, Wickes, 48" thrt., cap. 1½"x1".
Radial drill, 4' Mueller pl., t.a., s.p.d.
Radial drills, 4' & 5' Prentice plain.
Radial drill, 5' American plain, t. a., motor drive.
Radial drill, 6' American pl., belt dr.
Reduction gear, Foote, 50 to 1.
Saw, Williamson metal band.
Saws, American metal swing, m. d.
Shaper, 16" Hollingworth b. g. cr.
Shaper, 20" Steptoe b. g. crank.
Shaper, 24" Milwaukee b. g. crank.
Shaper, 24" Cincinnati b. g. crank.

Our warehouse is full of bargains. What have you for sale?

FOR SALE BY

J. L. Lucas & Son, Inc., - - 3 Fox St., Bridgeport, Conn.

NEW BRITAIN AUTOMATICS

2—New 1—9/16", 6 spindle, latest type, cost each.....$4800—$3600.
3—New 1—⅞x7, arranged for chucking, can be changed easily, serials 9000, each..... 2500.
4—1x5, 6 spindle, serials, one 6580, three 8700, each..... 1500.
2—No. 3, 6-spindle chucking machines, still set up, serials 9000, each..... 1500.
2—No. 24 chucking, new, never uncrated, serial 6400, each..... 2500.
1—No. 24 chucking machine, rebuilt, with 6 2-jaw chucks serial 6509..... 1750.
1—No. 24 chucking machine, no chucks, will be rebuilt, serial 5779..... 1500.
1—No. 33 chucking machine, very fine condition, serial 8109..... 1750.
1—New Britain sextuple automatic bar, serial 8791..... 1250.

FOR SALE BY

Scott-Bansbach Machinery Co., - 130 S. Clinton St., Chicago, Ill.

Bolt cutter, 2", dbl.hd D. & H. $ 300.
Drill presses, No. 310 Baker heavy duty, (5), each..... 325.
Drill presses, 26" Aurora, sliding head, p. f., (2), each..... 250.
Gridley, 1¼", 4 sp., type F, equipt 900.
Gridley, 1½", 4-sp., type G, equipt 1100.
Gridley, 2¼", 4-sp., type F, equipt 1000.
Header, 1" Nat'l, pl. type, clutch 500.
Header, ⅝" Acme (Chapin) clutch 350.
Lathe, 30"x24' Lodge & Shipley, patent hd., motor dr., with 10 h. p., d. c., 220 volt, direct connected motor, complete with chuck ..... 1250.
Lathe, 16"x8' Prentice, q. c., all geared, h. s., p. d..... $ 800.
Miller, 42" Biggs (Gooley & E.) 500.
Miller, Oesterlein pl., 24x7½x18 425.
Press, geared, No. 8-M American Can, 3" str., 25000 lbs... 2000.
Punch, No. 15 W. & W., single end, 12" throat ..... 300.
Shaper, 20" Rockford, b.g., p.f. 150.
Shaper, 26" (no name) b. g. c.k., hvy. duty, in operation..... 750.
Shear, alligator, 3" cap., low knife type..... 350.
Turret lathe, 21" Gisholt, complete with chuck & equip..... 500.

FOR SALE BY

J. E. Haetten & Co., Inc., - 50 Church St., New York, N. Y.

Automatics, ½-¾" Cleveland model B, (9), each..... $ 100.
Boring mill, 42" Bullard, p. f., rapid traverse, motor..... 1750.
Conveyor, 51' portable, Stearns, 24" belt..... 1200.
Drill, 20" Barnes all geared, s. p. d., reverse..... 250.
Drill, 4' Niles semi-universal radial, s. p. d..... 1500.
Drills, No. 25 Foote-Burt heavy, 3" capacity..... 500.
Drill, 16" Avey 6-spindle h. s., with chucks..... 650.
Grinder, No. 14 Brown & Sharpe 10x40 plain..... 400.
Grinder, No. 10 Brown & Sharpe plain 6x20, A1..... 400.
Grinder, 16x48 Landis crankshaft, adj. centers..... 850.
Grinder, No. 65 Heald cylinder, excellent condition, (6), each..... 850.
Hammer, 200 lb. Gould & Eberhardt, sheave lift..... 250.
Keyseater, No. 2 Mitts & Merrill, lot posts and cutters..... 350.
Lathe, 21"x8' LeBlond, g. h., d. c. motor, arr..... 750.
Lathe, 16"x6' Lodge & Shipley, s. b. g., d. c..... 150.
Miller, No. 1½ Cincinnati universal, cone drive, A1..... 700.
Miller, 27"x12' Ingersoll, 2 heads loose rail, m. d..... 2750.
Miller, 30"x30"x16' Ingersoll, 3 heads fixed rail, motor arr..... 2000.
Miller, No. 6 Becker vertical, rotary table..... 1250.
Pipe machine, 6" Curtis, belt drive..... 350.
Planer, 22"x22"x8' Gray planer, 1 head, b. d..... 450.
Planer, 24"x24"x6' Whitcomb, 2nd belt drive..... 500.
Planer, 36"x36"x8' Pond Plainfield, 2 heads..... 1000.
Presses, No. 10 Zeh & Hahnemann, percussion..... 600.
Tapper, No. 1 Garvin automatic, like new..... 175.
Turret lathe, 34" Gisholt, belt drive..... 500.
Turrets, No. 6-A Potter & Johnston, (5)..... 400.

FOR SALE BY

The Reeve-Fritts Co., 558-560 W. Washington Blvd., Chicago, Ill.

Drill, 4-spindle Barr, ⅜" cap.
Drill, 24" Milwaukee, b. g., p. f.
Drill, 2 & 3 spindle Sigourney.
Grinder, 5"x10" Greenfield plain.
Grinder, No. 10 Besly, disc.
Lathe, 14"x6' Carroll-J., q. c. g.
Lathe, 14"x8' Hendey, q.c.g., taper.
Lathe, 16"x6' Bradford, c. r.
Lathe, 16"x8' Flather, q. c. g., taper.
Lathe, 9x12 Porter-Cable.
Lathe, 9x20 Porter-Cable.
Miller, No. 0 LeBlond plain, p. f.
Planer, 32"x24"x6' Rockford.
Press, No. 3 Rockford, o b. i.
Press, No. 4 Niagara, o. b i.
Riveter, No. 4A H. S. Hammer.
Screw mche., No.0 Foster, 9/16" cap.
Screw mche., ⅝x4 P. & W., pl. hd.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 N. 12th St., St. Louis, Mo.

PRECISION TOOLS.

No. 3 —7" swing Stark bench lathes, (12).
No. 4 —9" swing Stark bench lathes.
No. 3 Langelier swaging machine.
No. 3½ Langelier swaging machine.
No. 1 Dayton swaging machine.

GRINDERS.

No. 4 Brown & Sharpe universal.
No. 50 Gardner, disc.
No. 16 Brown & Sharpe plain.
8" Heald rotary, magnetic chuck.
Washburn twist drill grinder.
No. 60 Heald, cylinder.
30"x84" Diamond face.
No. 1 Fraser surface.
5"x18" Ott.
Schmidt auto. cylinder.

MILLING MACHINES

No. 1½ Rockford plain.
No. 1½ Brown & Sharpe.
No. 1 Knight vertical.
No. 3 Oesterlein plain.
No. 3 Cincinnati plain.
No. 4 Cincinnati plain.
No. 12 Kempsmith.

LATHES.

15"x 6' Monarch, q. c. g.
15"x 7' Carroll-Jamieson.
17"x 7' Oliver heavy duty.
20"x10' Rahn & Mayer.
20"x10' Lodge & Shipley.
26"x12' Putnam.
26"x12' Bridgeford.
26"x16' Whitcomb-Blaisdell.
32"x16' F. E. Reed.
44"x24' Pond, triple geared.

PLANERS.

24"x24"x 6' Powell.
30"x30"x 8' Cleveland, open side.
32"x32"x10' Cincinnati, 2 heads.
36"x36"x10' Flather, 2 heads.
42"x42"x16' Powell, 3 heads.
48"x48"x14' Gray, 2 heads.

DRILLS.

3' Canedy-Otto post drill.
24" Aurora, sliding head.
22" W. F. & John Barnes.
20" Champion.
5' arm Pond radial.
4' arm Bickford radial.
4-spindle Avey.
4-spindle Henry & Wright.

MISCELLANEOUS.

Acetylene generator, 100 cu. ft. cap.
Air compressors, (10).
Belt lacer, Peerless.
Boring mche., hor., No. 2 P. & H.
Buffing lathe, 5 h. p. Reliance, motor driven, 3 ph., 60 cy., 220 v.
Bulldozer, 75 ton Lourie hydraulic.
Gear hobber, 54" Schuchardt & S.
Gear hobber, No. 1 Schuchardt & S.
Gear hobber, No. 1 Farwell-Adams.
Hammer, No. 2-A High Speed
Keyseater, No. 2 Mitts & Merrill.
Pipe machine, 16" Bignall & Keeler.
Post hammer, Pettingell.
Punch, No. 5 Long & A., 5" throat.
Punch, No. 7 Long & A., 4" throat.
Punch and shear, ¾ in ⅝.
Riveter, Shuster, model A, ⅞".
Screw machine, 3"x36" Jones & L.
Screw machine, 2"x24" Jones & L.
Screw mche., 1½" Smurr & Kamen.
Screw machines, ⅝" Pratt & W., (2).
Squaring shear, 62", 18" gap, No. 10 gauge.
Tapping machine, No. 1 Garvin.
Tilted turret lathes, Nos. 2, 3 & 4 Wood.
Turret lathe, Libby 20".
Turret machine, 24" Greenlee.
Wheel press, 84", 300-ton.

FOR SALE BY

Hoosier Universal Machinery Co., - - - Goshen, Ind.

Drills, Minster No. 1 D heavy duty.
Flat turret, 2"x39" J. & L., 2-sp., new.
Gear cutter, Cincinnati, spur, 80$.
Gear hobber, Gould & E., 80$.
Grinder, Landis No. 1 universal.
Hammer, Mayer power, 50 lb. ram.
Planer, 24"x24"x14' Chandler No. 10, single head.
Radial drill, 3' Am. Tool Works.
Saw, metal, 13"x16" Peerless, motor drive.
Screw machine, Defiance No. 4, new.
Tooth rounding mche., Schuchardt & Shutte.
Turret lathes, J. & L. 2 3/16"x36", bar and chucking.
Turret lathe, P. & W., 1½"x14" swing.
Turret lathe, 24"x8' bed.

FOR SALE BY

Taylor-Hall Welding Corporation, 5 May St., Worcester, Mass.

SPOT AND BUTT WELDERS.

We offer rebuilt and fully guaranteed spot and butt welders as listed below:
One No. 0 Toledo butt welder, capacity ¼" round stock.
One No. 1A Thomson butt welder, capacity ⅜" round stock.
One No. 2A Thomson butt welder, capacity ½" round stock.
One No. 7C Thomson butt welder, capacity ⅝" round stock, or flats 2½"x¼".
One No. 10-A-6 Thomson butt welder, capacity ¾" round.
One No. 3 Thomson butt welder, capacity ⅞" round, or flats 2"x½".
One No. 20-A-10 Thomson butt welder, cap. 1½" round solid or 2" round pipe.
One No. 10B Toledo butt welder, capacity 1½" round or 2½" pipe.
One No. 40-A-2 Thomson butt welder, capacity 2" round solid stock.
One No. 133 Thomson spot welders, 10 k. w.
Two No. 140 Toledo spot welders, 20 k. w.
One No. 240 Thomson spot welder, 20 k. w.
One Thomson electric riveter, for rivets ⅜"x⅜" long to ⅝"x3" long.
One Thomson No. 21 automatic butt welder. This can weld 1,000 3/16" barrel hoops per hour, other work at similar speed.
Every machine demonstrated and fully guaranteed before selling.
Offered for immediate delivery and subject to prior sale.

FOR SALE BY

D. C. Oviatt & Co., - - 2170 Lakeside Ave., Cleveland, O.

PRESSES.

Bliss Nos. 1½ & 3½B, toggle.
Bliss No. 2 double crank.
Bliss No. 2-W wiring press.
Bliss 60½ rack and pinion.
Bliss 68-C & 68-N double action.
Bliss Nos. 73½, 77½ & 78½ s. s.
Bliss No. 27-K knuckle joint.
Bliss No. 39-B horning press.
Consolidated No. 56 trimming.
Consolidated No. 65 grd., straight s.
Consolidated No. 165 dbl. crank.
Toledo No. 666 knuckle joint.
Toledo No. 76 flywheel.
Toledo 54 & 55½ straight side.
Toledo No. 35-P geared press.
Toledo No. 165½ toggle drawing.
Toledo No. 167 toggle drawing.
Ferracute EG-6 embossing press.
Ferracute D-66 s. s. reducing.
Waterbury-Farrel No. 52 geared.
Michigan No. 5 inclinable flywheel.
Niagara No. 4½ inclinable, flywheel.

MISCELLANEOUS.

Automatics, Gridley ⅞", 1½", 1¾".
Bulldozers, W. & W. 2, 4, 6, 30.
Drills, Colburn D-1, D-2, D-3.
Forging machine, 4" Acme.
Gear cutter, No. 3 B. & S. 26".
Gear cutter, No. 3 B. & S. 36".
Grinder, Pratt & Whitney 14".
Lathe, Sidney 17"x5', q. c. g.
Rivet hammers, 2-A, 3-A, 4-A & 5A.
Rolls, N-B-P. 10', capacity ⅝".
Saws, Ryerson friction No. 3.
Screw slotter, No. 2 W-F., cap. ⅜x3".
Seamer, dbl., No. 22 Max Ams irreg.
Seamer, dbl., Niagara No. 10-S.
Shear, alligator, Canton No. 5.
Shear, alligator, Hilles-Jones No. 2.
Shear, Niagara 416-C slitting.
Shear, Toledo 36"x18 ga. power.
Shear, Quickwork rotary No. 40.
Tumbling barrels, 18"x30"x48".
Turret lathes, W. & S. 4 and 6.
Turret lathe, Libby 18".
Turret lathes, Acme 3½"x36".
Welder, Winfield, cap. 2 pcs. 3/16".

Over 400 Machine Tools in stock. Send us your inquiries.

FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

Clock, electric time system.
Demagnetizer, Walker.
Drills, Leland-Giff'd 2-3 sp., h.s.,b.b.
Drill, Detroit 5-spindle horizontal.
Drill, Gardam 12-spdl. adjustable.
Drills, Demco, H. & W., Kokomo 1-spdl., Sipp 2-spdl., h. s., b. b.
Drills, 20", 24", 34" b. g., & tapping.
Furnace, Holcroft 92 k. w. annealing.
Gear hobbers, Schuchardt & S. 24".
Gear shaper, Fellows 36".
Grinders, P. & W. 14" vertical surface; 4 Ott 5"x18"; Landis 12"x48".
Hack saws, 4x4, 6x6 & 6 Racine Jrs.
Lathes, Davis 22"x10', Bridgeford 27x9, Star 12x5, motor.
Punches, Felber 1" in 1", and slitt. shear; Scully, 20" throat, 1" in 1".
Punch presses, Bliss No. 2½, double crank; Bliss Nos. 18 & 20; Niagara No. 3.
Milling machines, Kempsmith No. 2; Ohio No. 20 plain; Becker No. 6 vertical; Becker "SD" vertical, rotary table, 17200 lbs.; Cin'ti No. 3 pl.; Amer. No 1½ univ.; Rockford 1½ universal; B. & S. 1½; Ohio 34.
Pipe mche., Jareckie 6" dies & cut-off.
Rivet spinners, Grant 3/16"x1½".
Screw machine, Gridley 1-spdl. 2½" auto.; Cleveland 1½" auto.; P. & W. No. 2½ hand; Foster No. 3 hand; Woods No. 2 tilted turret head; Bardons & Oliver No. 7.
Shapers, 26" open side planing; 15" Smith & Mills; 15" Kelly; 16" Milwaukee; 24" Walcott; 16" Steptoe; 24" Barker.
Shears, 60" thrt. rotary slitting, (2).
Tapping mche., Garvin No. 2 auto.
Welders, 20 k. w. spot. Toledo, (2).
Welders, butt, Federal, 2" rds.

FOR SALE BY

The O'Brien Machinery Co., 113 N. Third St., Philadelphia, Pa.

Boring machine, 36" Bullard, turret head, vertical.
Die sinker, No. 2 Pratt & Whitney.
Die sinker, No. 3 Pratt & Whitney.
Die sinker, No. 4 Pratt & Whitney.
Drill, 32" Aurora, motor driven, tapping attachment.
Drill, 28" Cincinnati Bickford, geared box drive.
Drill press, D-1 Colburn heavy duty.
Grinders, foundry, Norton heavy duty, (2).
Hammer, 4000 lbs. Chambersburg steam drop.
Hammer, 2500 lbs. Chambersburg steam drop.
Hammer, 2000 lbs. Chambersburg, double frame, steam.
Hammer, 1000 lbs. Chambersburg steam drop.
Hammer, 600 lbs. Cham'burg st. d.
Hammer, 1500 lbs. Erie sgl. frame st.
Hammer, 1000 lbs. Niles-Bement-Pond, double frame.
Hammer, 1000 lbs. Billings & Spencer board drop.
Hammer, Bement-Miles, 300 lbs.
Lathe, 22"x11' Lehmann, geared head, taper attachment.
Lathe, 24"x10' American, taper att.
Lathe, 25"x16' LeBlond.
Lathe, 28"x25' Pond.
Lathe, 28"x30' Harrington.
Lathe, 20/40"x10' Rahn-Larmon extension bed gap.
Milling machine, Newton combination circular milling machine and saw for structural work.
Lathe, 27"x10' LeBlond, with turret attachment.
Milling machine, No. 3 Becker univ.
Milling mche., No. 4B Becker vert.
Pipe machines, 2", 4", 6", 8" & 12" Oster, Cox, Williams, Eaton-Cole & Burnham and Jarecki makes, belt or motor driven, comp. stock.
Planer, 36"x36"x12" Woodward & Powell, motor driven, 3 heads.
Planer, 36"x36"x24', Bement, 4 hds.
Press, No. 54 Toledo gr. str. side.
Press, No. 73½ Bliss trimming press, with side shear.
Presses, Nos. 18, 19 and 20 Bliss.
Press, Chambersburg motor driven trimming.
Punch and shear, No. 3 Hilles & J., dbl. end, motor dr.; punch end, 42" thrt., cap. 1½" thru 1"; shearing end, 36" thrt., cap. 1" plate, 2½" round, 7"x1½" flat, 5"x5"x½" angle.
Punch and shear, Pels combination; punching cap. 1" thick; shearing, 2" rd., 2½" squares, 6x6x½" angles.
Radial drill, 5' Pond, motor driven.
Radial drill, 5' Bickford universal.
Saw, Newton No. 2 cold saw.
Saw, Espen Lucas No. 10 cold saw.
Shaper, 24" American.
Shaper, 24" Steptoe, back geared.
Shapers, 12", 14", 16", 21" and 24" stroke, assorted makes.
Shaper, 3 Bement-Miles massive heavy duty, traveling head.
Turret lathe, flat, 3"x36" Jones & L.
Turret lathe, No. 6½ Bardons & Oliver, 28" w. f. cap., cabinet base.

FOR SALE BY

J. L. Lucas & Son, Inc., - - 3 Fox St., Bridgeport, Conn.

PRESSES.

Surplus stock of large manufacturing plant. All in excellent condition.

50—No. 61 Bliss, 4" stroke	$225.
2—No. 62 Bliss, 6" stroke	275.
7—Waterbury-Farrel dial presses, 4" stroke	200.
10—C. & M. Farrel type dial presses, 3" stroke, weight 1200	200.
80—6" or 8" stroke, weight 2500 lbs	250.
60—6" or 8" stroke, with ratchet dials, weight 2500	300.
20—Reinforce swaging machines	750.

FOR SALE BY

A. M. Stoehr Machinery Co., 560 W. Adams St., Chicago, Ill.

Bolt cutters, 3 & 6-spindle Acme.
Boring mills, 42" Baush; 54 & 60" Niles; all have 2 heads; and others.
Compressors, 12 different sizes.
Drill presses, single spdl., L. & G.; 2-spindle H. & W.; 4-spdl. Foote-Burt; 4-spdl. Barnes; 22" Rockford.
Gear hobbers, cutters; No. 12 Barber-C., 48" & 60" G. & E.; 36" Fellows gear shaper, and others.
Grinders, No. 3 LaSalle plain and surface; 3x18" Norton, and others.
Lathes, 18x8 Barnes, hvy. duty; 19x8 LeBlond, q. c. g.; 16x8 Flather; 15 & 24 spinning, and others.
Milling mchs., No. 25 Becker plain; No. 6 Whitney; No. 0 Rockford pl.; No. 3 Thurston dieing, & others.
Oil extractors, centrifugal, (8).
Pipe machines, 6" Jarecki.
Punch presses, No. 16 Bliss horning; and others.
Punch & shears, No. 3 Long & A., d. e., ¾" thru ⅝"; No. 14½ W., d.e., 15" throat. No. 1-C New Doty, and others.
Riveters, No. 4-A & No. 5-A High Speed; No. 1 Townsend; No. 1 L. & A., ¾" capacity; and others.
Saws, 9x9 Sterling high speed; 12" band, and eight others.
Screw machines, Nos. 2 & 3 Foster (12); Nos. 52 & 53 Acme, others plain and automatic.
Shears, Rock River alligator, 1½".
Tapper, R. & S., ¾" capacity.
Welders, both spot and butt.
Wire straightening machines, (5).

FOR SALE BY

McCoy-Brandt Machinery Co., 210-14 Penn Ave., Pittsburgh, Pa.

Bending roll, 8'x¼", drop end.
Bending rolls, 16'x¼" Wickes, m. d.
Bolt cutter, 3" Acme.
Boring mill, 36" Bullard, rapid prod.
Boring mill, 5" bar, D. & H., floor type.
Boring mill, 6" bar, Niles horiz.
Bulldozers, Nos. 25 & 30 W.-W.
Drill, radial, 6' Western, m. d.
Drills, radial, 5' Prentice, s. p. d.
Forging machine, 3½" Acme, steel.
Forging machines, 2" and 3".
Gear generator, bevel, 8" Gleason.
Grinder, No. 4 Gardner, double disc.
Hammer, 1500 lb. Chambersburg steam drop.
Lathe, No. 5 Rivett precision, tur., etc.
Lathe, 14"x6' Hendey, grd. head.
Lathe, 16"x10' L. & S., cone, taper.
Lathe, 18"x12' Hollingworth, q.c.g.
Lathe, 24"x26' American, q.c.g., m.d.
Lathes, 26"x12' Putnam, h. d.
Lathe, 30"x18' L. & S., m. d., t. a.
Lathe, 36"x20' Sidney, q. c. g.
Lathe, 60"x25', cone, cheap.
Millers, horiz., Nos. 3 & 5 Cincinnati.
Millers, Nos. 1 & 2 Cleve. pl., s.p.d.
Miller, vertical, No. 3 B. & S., m. d.
Millers, Nos. 5C and 6 Becker vert.
Miller, No. 6 Whitney, hand.
Nut tappers, 10 spdl. Natl., cap. ⅝".
Pipe machines, 12", 10", 8", 4" & 2".
Planer, 30"x30"x8' N. B. P., 1 head.
Planer, 48"x48"x16' Putnam, 4 hds.
Planer, openside, 96"x72"x24' D &H.
Punch, multiple, 72" bet. housings.
Screw machines, No. 0 Brown & S.
Shaper, 20" Cincinnati, b. g. crank.
Shaper, 24" Hollingw'th, b.g., crank.
Shr., angle, H. & J., cap. 6"x6"x1".
Shear, H. & J., cap. 90x¼" plate.
Shears, guil., cap. 2½" and 2" and 1".
Shear, splitting, 24" tht., Ryerson, ½".
Shear, rotary bevel, Lennox, cap. ⅜" plate.
Straightener, No. 2 Abramson.
Straightener, Nos. 3 & 4 K. & R.
Straightener, No. 1 K. & R.
Testing mche., 200,000 lb. Riehle.
Testing mche., 100,000 lb. Riehle.
Turret lathe, 3"x36" J. & L.
Turret lathe, 24" Gisholt 6½", h. s.
Turret screw mches., No. 0 Foster.

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D. E. Rowlingson, - - - Box 265, Utica, N. Y.

Buffing stands, new and used, also emery stands.....$10. to $65.
Drill presses, 10" to 20" bench and floor.
Engine lathes, Hendey, Smith, Flather, Seneca Falls 12" to 18".
Hack saw, Fairbanks make.....$ 25.
Miller, Kempsmith universal, q. c. gears, div head, like new.
Miller, Owen universal, with d v head, vise and chucks.
Radial drill, Bickford, Cincinnati, Ohio, q. c. gears, angle and chuck.
Shaper, American, 18" vise, almost new, bargain.
Many other tools not listed, also hangers, belting, motors, pulleys.

FOR SALE BY

Carlson Machinery Co., - - - Davenport, Iowa

GRINDERS

6x32" Norton plain.
No. 65 Heald cylinder.
No. 2 Gardner disc.
No. 8 Besly disc.
No. 1 LeBlond univ. tool & cutter.
No 2 Oakley univ. tool & cutter.
Wilmarth & M. Yankee twist drill.
12" Marschke elec. grinder stand.

LATHES

12"x5' Shepard, geared hd., q. c.
14"x6' Hendey, geared head, q. c. taper attach , draw in attach.
14"x6' Hendey, yoke head, q. c., relieving attach., draw-in. attach.
14"x6' Carroll-Jamieson, q. c.
15"x6' South Bend.
16"x8' South Bend, semi q. c.
18"x8' Lodge & Shipley, q. c.

DRILL PRESSES

21" Canedy-Otto, b. g., p. f.
21" Canedy Otto, wheel & lever fd.
No. 24 Canedy-Otto, bench.
¾" Demco ball bearing, 7" overhang.
¾" Sipp ball bearing, 8" overhang.
25" Snyder, sliding hd., tap. att.

MILLERS

No. 1 Van Norman hand.
No. 1 Rockford plain.
No. 1 Kempsmith, plain.
No. 2 Cincinnati universal.
No. 2B Brown & Sharpe, s. p. d.
No. 15 Garvin plain.
No. 2½ Hendey, Lincoln type.

MISCELLANEOUS

Brake, 60" Peck, Stow & Wilcox, hd.
Broach, No. 2 LaPointe.
Die filer, No. 2 Cochrane-Bly.
Gear cutter, 72"x20" Cincinnati.
Gear hobber, 24" Schuchart & Schutte
Planer, 30"x30"x8' Cleveland open side

FOR SALE BY

Clinton Machinery Co., - - 128 So. Clinton St., Chicago, Ill.

MILLING MACHINES.

No 3H LeBlond, univ., fully equipt.
No. 3 LeBlond plain.
No. 34 Ohio plain.
No. 2½ LeBlond plain.
No 2 Rockford, s. p. d. univ., fully equipt, slotting attach., vert. head.
No. 1½ Cincinnati univ , fully equipt.
No. 1 Standard hand miller.

LATHES.

18"x8' Hendey with draw-in attach. collets and taper attach. & chucks.
18x8 Bradford q.c.g., d.b.g., complete.
16"x8' Prentice, q. c. g., complete.
14"x8' American, q.c.g., swings 16½".
18"x8' American, q c.g., swings 18½".
14"x6' Hendey, q. c. g., complete.
9"x4' Seneca-Falls, complete.

DRILL AND PUNCH PRESSES.

2-spindle Allen, 14".
4-spindle Taylor-Fenn, like new.
Single-spdl. H. & W., b. b , h. s., (3)
20" Hoefer, w. & lever feed.
22" Cincinnati, wheel & lever feed, b. g., s. h., with tapping attach.
No. 1 Consolidated, o. b. i.
No. 3 Walsh, o. b. i.
No. 3 Swaine, o. b. i., (2).
No. 20 Bliss, o. b. i.
No. 4 American Can, o. b. i.
No 6 Consolidated, b. g., o. b. i.

MISCELLANEOUS.

Grinder, No. 1 Grand Rapids, tool and cutter.
Hammer, 2A High Speed.
Shapers, 20" G. & E., b. g., (2).
Screw machine, No. 0 Brown & Sharpe automatic.
Screw machine, No. 1 Warner & S.
Screw mche., No. 1B Foster univ.

SECOND-HAND MACHINERY

FOR SALE BY

Miles Machinery Co., • • • Saginaw, W. S., Mich.

AUTOMATICS.

1⅛" and 2⅜" 4-spindle.
Nos. 24 and 34 New Britain.
No. 6-A Potter & Johnston.
1" New Britain, bar.
½" & ¾" Cleveland "A".
1½" Cleveland model B.

DRILLS RADIAL.

2½' Cincinnati Bickford.
3', 3½' and 4' Western.
3½' and 4' Mueller.
52" American sensitive.

GRINDERS CYLINDRICAL.

6"x18" Landis plain.
6"x32" Norton plain.
10"x36" Norton plain.
12"x32" Landis universal.
14"x72" Norton plain.
18"x96" Norton plain, m. d.

GEAR MACHINERY

No. 61 Fellows shaper.
12"x10" G. & E. hobber.
No. 13 B. & S. cutter.
18" No. 18H G. & E. hobber.
24"—36" G. & E. hobber.
36" No. 3 B. & S. cutter.

MILLING MACHINES.

No. 1½ Grand Rapids plain.
Nos. 2B, 2BS & 3B K. & T. plain.
No. 2B B. & S. plain.
No. 2 Kempsmith plain.
No. 2½ Rockford plain.
No. 3 Ryerson heavy duty plain.
No. 4 Cincinnati vertical.
No. 1 Cleveland universal.
No. 2 Kempsmith universal.
No. 5C Becker vertical.

BOLT THREADERS.

1" and 2½" Landis single spindle.
1" Reliance double spindle.
1½" Landis double head.
4" Landis, with lead screw.

UPSETTERS.

1" Ajax, roller feed.
1½" Ajax, hand feed, stop motion.
1½" Ajax, continuous motion.
2" Ajax and Acme, steel bed.

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No. 87 Bliss, foot-lever.
No. 0 Wm. Freck, open back.
Nos. 18 & 18 C Bliss, o. b. i.
Nos. 2 & 3 Consolidated, o. b. i.
No. 3 R. & K., o. b. i., 4" stroke.
No. 3 Walsh, o. b. i., 2" stroke.
No. 4 McDonald, o. b. i., 2½" stroke.
No. 60½ Bliss, rack & pinion.
No. 3 Bliss, double crank.
No. 1½ Bliss, toggle.
No. 2½-C Bliss, toggle, new.
No. 169½ Toledo, toggle.

MISCELLANEOUS.

Can machinery, used, large assortment.
Grinder, 12"x36" No. 2 Cincinnati full universal.
Shear, No. 30 Niagara, power square, capacity 20 ga.

FOR SALE BY

W. P. Little Co., - West 9th & Front Sts., Cleveland, Ohio

LATHES.

25 lathes, 12", 14", 16", 18", 20", 26" and 32" swing.

GRINDERS

14" Pratt & Whitney vert. surface.
No. 2 Modern universal.
No. 75 Heald internal.
No. 24 Gardner disc, vert. spindle.
No. 10 Besly disc.
No. 6 Bryant chucking internal.

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No. 3 Cady, Stiles pattern.
No. 18½ Holden, inclinable.
No. E. G. 22 Ferracute, arch.

MISCELLANEOUS.

Beader, No. F-20 Yoder.
Boring mill, Lucas horiz., 2½" bar.
Broach, 3 A LaPointe, Hudson.
Cold saw, 20" Burke.
Drill, No. 25 Foote-Burt.
Hammer, 50 lb. Bradley, compact.
Hammers, 50 lb. Beaudry, (2).
Hammer, 250 lb. Morgan steam.
Keyseater, No. 0 Mitts & Merrill.
Planer, 24"x10' Pratt & Whitney.
Planer, 32"x32"x14' Pond.
Riveter, ¾" Shuster, elastic blow.
Screw mche., No. 1 Brown & Sharpe.
Spline miller, 2" Pratt & Whitney.
Tapper, ¾" Rickert & S., radial.
Tapper, ¾" R. & S. on column.
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Partial list. Send us your inquiries. 150 other tools in stock.

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Automatic, 2½" Gridley, single spdl.
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Drills, 20" Buffalo (4).
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Lathe, 3x60 Fitchburg lo-swing.
Pipe machine, No. 70 Forbes.
Screw mchs., No. 4 W. & S., g.f.h., (3).
Straightener, No. 2½ Corey.

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Drill press, 2-spindle Barr sensitive.
Lathe, 14"x 6' American.
Lathe, 14"x 6' Monarch.
Lathe, 16"x 8' American, geared head, rebuilt.
Lathe, 16"x 8' Monarch.
Lathe, 16"x10' American.
Lathe, 8x60 Fitchburg lo-swing.
Millers, 3½ Bilton automatic (4).
Miller, 1½ Bilton automatic.
Miller, No. 5 Becker vertical.
Millers, No. 4 LeBlond plain (2).
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Planer, 60"x60"x22' Niles.
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Turret lathe, 2½x26 Pratt & Whitney.
Turret lathe, No. 2½ s. g. Garvin.
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Turret lathe, 2x24 Jones & Lamson.
Turret lathe, 21" Gisholt.
Turret lathe, No. 3 Cincinnati-Acme.

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14"x 6' Worcester Semi Q. C.
16"x 8' Morris Q. C.
16"x 8' Morris Geared Head.
18"x 8' Morris Q. C.
18"x10' Morris Q. C.
21"x 8' LeBlond H.D. 220 V., D.C.
22"x10' Morris Geared Head.
22"x12' Morris Q C.
30"x14' Niles, Single B. G. Cone.
32"x17' Pond Single B. G., Cone.
36"x18' Niles Single B. G., Cone.

PLANERS

32"x32"x12' Pond, 2 Heads, M. D.
32"x32"x10' Niles, 2 Heads.
36"x36"x10' Niles, 4 Heads.
38"x38"x12' Niles, 2 Heads.
38"x38"x16' Niles, 3 Heads.
42"x42"x12' Niles, 4 Heads.
42"x42"x14' Pond, 3 Heads.
48"x48"x14' Pond, 4 Heads, M. D.
48"x48"x20' Pond, 4 Heads, M. D.
60"x60"x14' Pond, 4 Heads, Motor.
96"x72"x42' N-B-P Rev. Motor.
10'x10'x36' Betts, Motor.

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60"—4" Bar Niles Horizontal B & D Machine.
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42" Niles B. & T. Mill.
53" Niles B. & T. Mill.
62" Niles B. & T. Mill.
73" Niles B. & T. Mill.
5" Bar Niles Floor Borer.

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16" S. G. Stockbridge.
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26" B. G. Niles Acme.
26" Gear Box Stockbridge.
26" Bement Dbl. Traveling Hd., Mtr.
15" Bement Slotter 220 v., D. C.
19" Putnam Slotter Belt.

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5' Niles Universal Gear Box.
5' Niles Semi Universal Speed Box.
6' Niles Semi Universal Speed Box.
6' Niles Full Universal Speed Box.
6' Niles Universal, Motor.

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⅞" x ⅞" Cap. 12" Throat L. & A. Horizontal Punch.
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600 lbs. Bement Steam Hammer.
800 lbs. Bement Board Drop.
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48"x48"x14' Bement Horizontal Slab Miller.
No. 3-B Broach, LaPointe.

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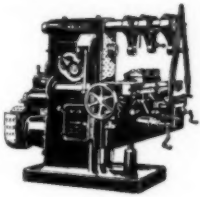

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1½A Mfg.	**Single Overarm**
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2A Mfg.	**Double Overarm**
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2B Plain	**Single Overarm**
3B Plain	**Single Overarm**
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3B Vertical	
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20" Cincinnati Back Geared Crank Shaper.
20" Queen City Back Geared Crank Shaper.
20" Rockford Back Geared Crank Shaper, gear box drive.
16" Steptoe Back Geared Crank Shaper.
16" Smith & Mills Plain Crank Shaper.
15" Hendey Friction Shaper.
26"x26"x 8' American Planer, one head.
36"x36"x14' American Planer, two heads.
38"x38"x18' Niles Tool Works Planer, two heads.

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No. 60 Heald Cylinder Grinder, late type.
No. 70 Heald Internal Grinder.
No. 2 Brown & Sharpe Surface Grinder.
10"x50" Norton Plain Grinder.
6"x32" Norton Plain Grinder.
No. 1 Brown & Sharpe Universal Cylindrical Grinder.
No. 2 Oakley Universal Tool and Cutter Grinder.
No. 1 P. K. LeBlond Universal Tool and Cutter Grinder.
18"x12" Gould & Eberhardt Gear Hobber.
No. 12 Barber-Colman Gear Hobber.
18" Schuchardt & Schutte Gear Hobber.
No. 4—36" Brown & Sharpe Auto. Spur Gear Cutter.
No. 3—26" Cincinnati Auto. Spur Gear Cutter.
24" Gould & Eberhardt Auto. Spur Gear Cutter.
No. 12 Brown & Sharpe Auto. Spur and Bevel Gear Cutter.

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38"x18' Wm. Gleason, triple grd.
30"x12' LeBlond, q. c., hvy. duty.
24"x12' LeBlond, q. c., hvy. duty.
24"x10' Boye & Emmes, q. c.
21"x10' LeBlond, q. c., hvy. duty.
21"x 8' LeBlond, q. c., hvy. duty.
20"x10' American Tool Wks., q.c.
18"x11' Chard, q. c., heavy duty.
18"x 8' Lodge & Shipley, q. c.
16"x 8' Lodge & Shipley, q. c.
16"x 6' R. K. LeBlond, q. c.
14"x 6' Lodge & Shipley Tool Room, quick change, with taper and collets.
14"x 6' Hendey, yoke head, qk. change, with taper.

RADIAL AND UPRIGHT DRILLS

3' American Tool Works Triple Geared Radial, speed box drive.
3' Prentice Bros. Radial, speed box drive.
Nos. 1 & 3 W. F. & John Barnes Horizontal Radials.
28" Aurora Drill, tapping attachment.
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26" W. F. & John Barnes Drill.
24" Cincinnati-Bickford Drill, speed box drive.
24" Aurora Drill.
22" W. F. & John Barnes Drill.
20" W. F. & John Barnes Drill.
6-spindle Henry & Wright High Speed Ball Bearing Drill.
Henry & Wright High Speed Ball Bearing Drill, with power feed.

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Rebuilt Machinery

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No. 1-B R. K. LeBlond Universal, complete.
No. 1½ Rockford Universal, complete.
No. 3 R. K. LeBlond Universal, complete.
No. 3-B Heavy Brown & Sharpe Plain.
No. 3 Kempsmith Plain, with vertical attachment and rotary table.
No. 3 Cincinnati Plain.
No. 2½ R. K. LeBlond Plain.
No. 2 Cincinnati Plain.
No. 2 Brown & Sharpe Plain.
No. 1½ Valley City Plain.
No. 0 Cincinnati Plain.
No. 5 Becker Vertical.
No. 7 Becker, Lincoln Type.
Hendey, Lincoln Type.

TURRET LATHES AND SCREW MACHINES

24" Gisholt Turret, late type, 6¼" hole.
3"x36" Jones & Lamson Flat Turret.
2½x26" Pratt & Whitney Flat Turret.
2" Pratt & Whitney Hexagon Turret.
No. 6 Warner & Swasey Turret.
No. 4 Universal Warner & Swasey Turret.
No. 2 Warner & Swasey Plain Head Turret.
No. 3 Foster Turret.
No. 4 Brown & Sharpe Wire Feed Screw Machine.
No. 2 S. P. Garvin Screw Machine, New.
No. 1 S. P. Garvin Screw Machine, New.

MISCELLANEOUS

Air Compressor, 16"x14" Chicago Pneumatic, class N. S. B., belt drive.
Arbor Press and Broaching 15-ton Hercules.
Bolt Threading Mche., 1½" Landis dbl. spdl., with lead screw, motor dr.
Boring Mill, 34" Colburn vertical, turret head.
Boring Mill, 2½" bar Morris Horizontal, motor drive, a. c. motor.
Broaching Machine, No. 3-B J. N. LaPointe, late type, friction pulleys.
Hack Saw, 6"x6" Peerless high speed.
Hack Saw, 6"x6" Racine high speed.
Hammer, 200 lb. Bliss, board drop.
Hammer, 600 lb. Chambersburg single leg, steam.
Keyseater, No. 00 Baker Bros., ¾" capacity.
Keyseater, No. 2 Davis, ⅝" capacity.
Press, power, No. 2 Toledo, o. b. i.
Press, power, No. 2 Michigan, o. b. i.
Press, power, No. 8 Chas. Lefler, o. b. i.
Press, power, No. 5 Michigan, geared, o. b. i.
Riveting Hammer, No. 4-A High Speed.
Shear, power, 42" No. 242 Niagara.
Shear, power, 52" No. 252 Niagara.
Shear, power, 10' Niagara, capacity 10 gauge and lighter.
Tapping Machine, No. 2X Garvin.

408 E. Pearl St., CINCINNATI, OHIO

OUR STOCK IN CINCINNATI

FOR SALE

3—No. 1 Cincinnati Back Geared Plain Milling Machines, each.....$ 275.00.
3—3' American Sensitive Radial Drills, ea. 250.00.
2—36" Brown & Sharpe Gear Cutters, ea. 950.00.
1—10x48 Brown & S. Plain Grinder..... 1200.00.
2—24" Gisholt Turret Lathes, each..... 1000.00.
4 Spdl. NATIONAL ACME Screw Machines.
6—No. 52 ⅞" Capacity, each.....$ 425.00.
1—No. 56—2¼" Capacity..... 650.00.
6—¾" Cincinnati Automatic 5-sp. Screw Mchs., cap. ¾" diameter, 3" length, ea. 1100.00.

Write for surplus machine tool list

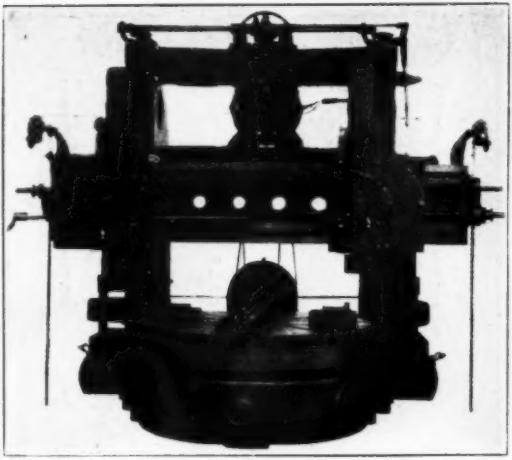
Cincinnati Automatic Machine Co.
Cincinnati, Ohio

Specials For July Only

24"x12' Boye & Emmes lathe, loose change gears, excellent condition,..... $ 390.00
4 sp. Allen Drill, ball bearing, practically new,.... 595.00
26" Kelly Shaper, heavy duty, back geared, new,.. 885.00
14x36 Pratt & Whitney Vertical Surface Grinder, perfect condition,..... 585.00
12x36 Diamond Surface Grinder, excellent cond.,.. 515.00
16x48 latest type Landis Crankshaft Grinder, like new, a $5000.00 machine,..... 1250.00
No. 3 Cincinnati Vertical Milling Machine, sliding head type, single pulley drive, good cond.,.... 875.00

500 Other Bargains in our Warehouses

A. R. Marsh Machinery Co.
4900 West 73rd St., Cleveland, Ohio



This 60" Boring Mill $2,000

60" Baush; table 60" diam., 8" thick; actual swing 62"; clearance under rail, 51"; heavy type, complete with 10 H. P. Westinghouse 220 Volt D. C. Motor, dynamic brake and push button starter.

Grinder, 10"x72" Norton plain,..... $1,000.

Drill, Baker No. 310, 2½" cap..... $450.

Guaranteed condition or money back

See additional equipment pages 83 & 113

For Big Tools

A. F. Strafer, 30 Church St., **New York**

MOTCH AND
THE MERRYWEATHER
MACHINERY CO
CLEVELAND
DETROIT CINCINNATI
PITTSBURGH

Machines of Quality

Several hundred used machines are stocked in our Cleveland warehouse.

Connected with this is a model machine shop devoted exclusively to rebuilding these machines.

Let us send you one of our circulars describing our methods, listing our stock and picturing our plant.

Upon receipt of your address we will forward these circulars periodically.

Our New Warehouse and Offices

Bertolette Used Machinery Exchange

14th & Provost St., Jersey City, N. J.

A FEW OF OUR GOOD USED TOOLS

6' Cincinnati Bickford Radial, s. p. drive, like new, late type.
4' Bickford Radial.
3' Cincinnati Bickford Radial, s. p. drive.
10"x72" Norton Plain Grinder.
6x23" Norton Grinder.
2—21x8' Heavy duty LeBlond Lathes, motor drive.
16"x8' Monarch D. B. Geared, Q. C. G., like new, $325.
72x72x14 Pond two head Planer.
72x72x30' Sellers Planer, 4 heads.
24" Baker Drill, s. p. drive, heavy duty, No. 310.
60" Brown & Sharpe Gear Cutter.
48" Brown & Sharpe Gear Cutter.
24" Gould & Eberhardt Gear Cutter.
24" Cincinnati Back Geared Shaper.
16"x8 Hendey Yoke Head Lathe.
18"x8 Hendey Yoke Head Lathe.
8" Q. & C. Cold Saw.
6x6 Racine Hack Saw.
No. 60 Quickwork Rotary Shear, used 60 days, every equipment, arranged for mtr. dr.; write for details.
18"x8' Springfield Plain Change Lathe, $250.
14"x10' D. C. or A. C. Motor Driven Lodge & Shipley Lathes, $375.
16"x8' Heavy Duty Oliver Quick Change, D. B. Geared Lathe.
42"x16' Putnam Geared Hd. Lathe, hvy. duty, like new, quick change, arranged for motor or single pulley.
36"x18' Putnam Plain Change Lathe, $400.00.

Write us at our new address for any tools you require

Bertolette Used Machinery Exchange

14th & Provost Sts., :-: Jersey City, N. J.

"Nearly half century's experience and reputation in the used machinery market."

Tel. Montgomery 5420

Must Vacate Our Warehouse — Attractive Prices To Move Stock

BORING MILLS:	30" Bullard Vertical	$200.
	36"/48" Bridgeport Extension, 1 swivel head	325.
LATHES:	21"x12' Johnson, hollow spindle, taper attach.	$200.
	24"x12' Schumacher-Boye	475.
	24"x14' Rohn-Mayer-Carpenter	650.
	24"x16½' Johnson, solid spindle	275.
	26"x10½' Walcott Hvy. Duty Q.C.G., 3, ea.	650.
	27"x12' Pittsburgh	550.
	24"x6' Gisholt Turret, 6¼" hol. spdl.	800.
	3"x36" Jones & Lamson Flat Turret	800.
	2¼"x24" Jones & Lamson Flat Turret	650.
MILLING MCHE.:	No. 3 Cincinnati Plain, table 12"x3'11", as is	$250.
PRESSES:	Double Cam Action, 4" stroke	$100.
	Double Acting Drawing, 3¼" stroke	125.
SHEARS:	Waterbury-Farrell Rotary Shear, about 16 ga.	$ 40.
	Doelger-Kirsten High Knife Alligator, 3¾"cap.	1250.
	Canton No. 5 High Knife Alligator, 3" cap.	1250.
HAMMERS:	25 lb. Bradley Cushioned Helve	$125.
	40 lb. Bradley Cushioned Helve	150.
	800 lb. Bement Single Frame Steam Forging	475.
	2000 lb. Bement Steam Drop	475.
SHAPERS:	20" Gould & Eberhardt	$375.
	16" Springfield	225.
	14" Gould & Eberhardt	175.
DERRICK & HOIST:	American Wood Stiff Leg Single Line Derrick with mast 16x16x40' and 80' Boom, and Double Drum Electric Hoist complete with geared friction Swinger and 37 H.P. Motor, 3 Phase, 60 Cycle, 220 Volts	$900.
MISCELLANEOUS:	Pipe Folder, 32" hand power for 24 gauge	$ 20.
	Pipe Machine, Eaton-Cole-Burnham 1" to 4"	225.
	Pipe Machine, Eaton-Cole-Burnham 2½ to 8"	450.
	Salamander for coke heating, inside dimensions 22"x22"x24", 38" high. Good as new	15.
	Saw, Ghem Cold, 22" dia., cap. 6" round	100.
	Slotter, 10" Bruckton	150.
	Steel, Rex AA High Speed Tool Steel for Armstrong Tools, new, as listed: 4¾-lbs., ⅝" square, 4" long. 3¾-lbs., 5/16" square, 2½" long, per lb.	75 cts.
	Swaging Machine, Excelsior, cap 3/16"	$ 50.

RUSSELL MACHINE COMPANY

1447 Oliver Building, PITTSBURGH, PA.

NEW 3 PHASE MOTORS CHEAP. 3 H. P. $57.50; 5 H. P. $67.50

LATHES

12"x 8' Cleveland, geared head.
14"x 6' Carroll-Jamieson, new, q. c.
14"x 6' Hamilton, grd. hd., motor dr.
14"x 6' Monarch, quick change.
14"x 6' Rockford, q. c., t. a., plain.
14"x 6' Sebastian, c. r., h. d., mtr. dr.
14"x 8' Sidney, double back geared.
14"x 6' Hamilton, style B.
16"x 8' Sidney, double back geared.
18"x10' American, quick change.
20"x10' Hamilton, rapid production.
22"x10' Greaves & Klusman.
24"x24' Prentice, with raising block.
27"x 8' Bridgeford, heavy duty.
8x60" & 3½x60" Fitchburg, Lo-Swing.

TURRET LATHES and SCREW MACHINES

No. 4 Defiance, 1¼" capacity.
No 4 Woods Tilted Turret.
1½" Milholland.
2x24 and 3x36 J. & L.
No. 1 Foster, 15/16" capacity, (2).
Warner & Swasey No. 2.
Warner & Swasey No. 4.
Nos. 52 & 56 National Acme auto.

SHAPERS

14" Niles, traveling head.
14" Steptoe, crank.
16" American, tool room.
16" Cincinnati b. g., motor drive.
16" O. & S. b. g. crank, new.
24" O. & S. back geared crank.

The Entire Plant of the Columbus Machine Company. Ask for List.

PRESSES

Nos. 3-A & 5-A Willard inclinable.
Nos. 5 and 6 Toledo inclinable.
Nos. 1½, 2, 2½ & 4 Robinson, new.
Emco, bench, for radio parts.
No. 35 Niagara straight side.
Perkins, dbl. housing, wt. 4,000 lbs.

DRILLS and RADIALS

3' W. E. Gang plain.
3½' Silver, sgl. pulley, gear box dr.
4' Universal Radial Drill Co. plain.
Electric drills, Black & Decker.
22", 24", 26", 28" and 32", sliding hd.
26" Barnes, sliding head, all geared.
4-spindle Reed sensitive.
Electric drills, Thor, all sizes.

MILLING MACHINES

No. 1 Kempsmith universal, new.
No. 2 Kempsmith plain, new.
No. 3 Kempsmith univ. and plain.
No. 3 Cincinnati universal.
No. 25 Becker plain, power feed.
No. 3 LeBlond, with vertical attach.
No. 2 H Brown & Sharpe plain.
Oesterlein 24x7½x18 plain.
Briggs "A" high duty, 24x8" table.
No. 7 Becker, Lincoln type.

GRINDERS

Nos. 1 & 78 W. & M. surface.
No. 2 W. & P. 10"x30" universal.
6"x15" Fitchburg plain.
12"x36" Cincinnati universal.
16"x42" Landis universal.
36" and 66" Yates plate.
No. 70 Heald internal.
No. 60 Heald cylinder.
Schmitt cylinder grinder.
No. 3 Ohio universal, tool and cut.
No. 4 Gardner 20" double disc.
No. 10 Besly 18" double disc.
No. 20 Bryant, chucking.
Capital internal, new, 2"x2" cap.

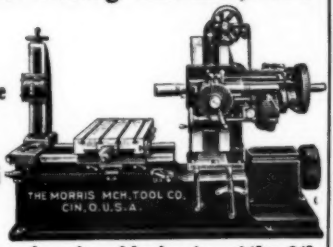
MISCELLANEOUS

Band saw, Clark, compound.
Band saws, Napier 4"x4", 10"x10".
Bending rolls, 7' for 3" plate.
Boring mill, Colburn No. 3, tur. hd.
Boring mill, 54" Colburn, 2 hds., c. j.
Brake, 10', 18-gauge metal.
Broaching mchs., 1 and 3 LaPointe.
Positive pres. blower, No. 5 Conner.
Compressors, 6x8, 8x8 and 9x8.
Drawing tables, adjust., 42"x6' top.
Gear cutter, No. 3—26 B. & S.
Gear miller, Bilton No. 1.
Hammer, 40 lb. Bradley, helve.
Hammer, 150 lb. Standard drop.
Oil separator, Springfield.
Pipe machines, 2", 4" & 6".
Pumps, Gould triplex, 6½x8".
Punch & shear, ½x1½x10" throat.
Riveting hammers, High Speed Nos. 2, 3, 4 & 5-A.
Scale, 1500 lb. Toledo, dial type.
Sceleroscope, Shore type C.
Shear, 60" Peck, Stow & W., 18 ga.
Shear, No. 362 Robinson.
Shear, No. 20 Quickwork, 30" throat.
Shear, circular, Pettingell, 60" thrt.
Tapping machine, Acme 6-spindle.
Threading mche., W. & P. 2-spindle.

THE OSBORNE & SEXTON MACHINERY COMPANY
COLUMBUS Dept. H. OHIO

Morris Horizontal
Drilling and Boring Machine, New

With
Factory Guarantee
$1,350
F. O. B. Cincinnati



We also have a number of used Lathes from 14" to 24" that are in good condition. Prices quoted on request.

The Morris Machine Tool Co.
CINCINNATI, OHIO

Open Side Planer

30"x30"x18' Cleveland
2 Rail Heads
1 Side Head
Belted Motor Drive

Price - - $2750.

Marshall & Huschart Machinery Co.
17 So. Jefferson St., Chicago, Ill.

What Price Bargain?

A good purchase is just as good before it's bought as it is after it's paid for. The bargain lasts long after the purchase price is forgotten. And you won't forget the price either because the next time you're interested in used machinery, you'll see J. J. McCABE first.

HERE ARE SOME OF THE BARGAINS:

15" swing x 6' Sebastian Lathe.
18" swing x 8' High Duty Lathe, Quick Change.
26" swing x 14' Niles-Bement-Pond Lathe.
36" swing x 16' High Duty Lathe, Quick Change.
48" swing x 24' bed Bement-Miles Triple Geared Lathe.
54" swing x 20' bed Pond Lathe.
110" swing x 42' Bement-Miles Lathe.

26"x 6' Niles Planer.
60"x60"x30' Pond Planer.
72"x24' Niles Planer.

24" Gould & Eberhardt Shaper.
18" Ohio Shaper.
14" Smith & Mills Shaper.

60" Hilles-Jones Punch.
42" Long & Allstatter Punch & S.
800 lb. Bement - Miles Steam Hammer.
10'-8" Pyramid Type Bending Rolls.
6' Bending Rolls.
½" cap. McCabe Flanging Mch.
No. 22 Brainerd Milling Machine.
4¾" bar Niles Horiz. Boring Mill.
6' arm Pond Radial Drill.
12" Peerless Hack Saw.
5" No. 5D Saunders Pipe Mche. capacity 1½" to 5" pipe.

Used factory rebuilt McCABE 2-in-1 Double Spindle Lathes:

14' bed Standard Pattern 26-48" swing raised to 32-54" swing, Internal geared Face Plate, Belt Drive.

12' bed Standard Pattern 26-48" swing; Plain Plate Belt Drive.

30' belt Standard Pattern 26-48" swing raised to 38-60" swing. Internal geared Face Plate; Belt Drive.

Two Machines in the South West:

In TEXAS—8' McCabe Bending Rolls.
In ARIZONA—McCabe "2-in-1" Double Spindle Lathe.

J. J. McCabe Lathe & Machinery Corp'n

SINGER BUILDING - - NEW YORK CITY

Special Bargains in Used Machine Tools

1—No. 0-G Brown & Sharpe Automatic Screw Machine with slotting attachment and attachment driving stand..... $ 875.
2—No. 3-26" Brown & S. Automatic Gear Cutting Machines with pump, c. s., change gears, feed gears and wrenches ea. 700.
1—No. 3 Heavy Brown & Sharpe Automatic Gear Cutting Machine, capacity 24"x8" (Practically New)..... 1800.
1—No. 11 Brown & Sharpe Grinder with countershaft, pump, center grinding attachment, one steady rest, three universal back rests and one plain back rest..... 350.
1—12"x48" Modern Plain Cylindrical Grinder, carrying wheel 18" dia., 2" wide, 5" hole, and with self contained countershaft for belt drive..... 650.
1—No. 2 Diamond Automatic Surface Grinder, belt driven, with pump and water guards..... 750.
1—25"x18' LeBlond Heavy Duty Quick Change Gear Engine Lathe with steady rest, guards, 24" face plate, pump and piping, motor driven by Westinghouse 15 h.p. 220-volt, d.c mtr. 1250.
1—Practically new Niagara No. 2120 Power Squaring Shear, capacity 14 gauge by 10'..... 1000.

THE E. A. KINSEY CO., 335 West Fourth Street, **CINCINNATI, O.**

BRANCHES: INDIANAPOLIS, IND., HAMILTON, OHIO, DAYTON, OHIO, LOUISVILLE, KY., COLUMBUS, OHIO

REAL BARGAINS

Foster Screw Machine, No. 3 complete, with wire feed..$175.
Foster Screw Machine, No. 1 complete, with wire feed.. 125.
Jarecki Bolt Threader, 1½" capacity, with dies..... 135.
No. 1 Oesterlein miller, with c. s..... 175.
16" Steptoe Crank Shaper..... 185.
20" Washburn High Speed, Sensitive Drill..... 125.
18x8' Cincinnati Q. C. Lathe, complete..... 325.
36" Greaves & Klusman Band Saw..... 150.
24" Superior Vertical Drill Press..... 155.
Blount Wet Grinder..... 35.
Dumore Tool Post Grinders, with internal attachment.. 35.

Guaranteed Rebuilt Leather Belting

6¢ Per Inch Per Foot. Double Belt, Double Price.

ELECTRIC MOTORS—ALL SIZES A. C. D. C.

Exhaust Fans—Motor Driven Blowers, A. C., 220 Volts, 60 Cycle, 3 Phase

110 or 220 Volt Universal Electric Drills, $20.

All Our Motors Are Guaranteed

Midland Equipment Co., 612 W. Van Buren St., CHICAGO, ILL.

Opportunity Knocks Again For the Conservative Buyer

Real Values in Machine Tools—

Planers

72"x54"x24' Pond, 4 heads.
72"x72"x18' Betts, 4 heads.
36"x36"x24' Pond, 4 heads.
36"x36"x12' Woodward & P., 3 hds.
36"x36"x 8' Dietrick & H., openside.
26"x26"x 8' Pease.

Boring Mills

96" Niles, 2 heads.
2—54" Bullard Maxi.
2—42" King.
2—Blomquist & E., horiz., 3¼" bars.

Hammers

5000 lb. Chambersburg.
4000 lb. Chambersburg.
4000 lb. Massillon.
3500 lb. Massillon.
2500 lb. Massillon.
2—800 lb. Waterbury Farrell board.
2—600 lb. Waterbury.

Grinders

10x50 Norton plain.
8x36 Fitchburg.
16x48 Landis crankshaft.
No. 2 Brown & Sharpe universal.
No. 2 Taft Pierce universal.
Heim's Centerless, motor drive.
No. 4 Detroit Centerless, motor drive.
10x30 Webster & Perks universal.

Screw Machines

3¼" Gridley.
1¼" Gridley.
No. 55 National Acme.
No. 53 National Acme.
No. 52 National Acme.
No. 00 Brown & Sharpe.
No. 0 Brown & Sharpe.
2" Cleveland Model B, New.
2" Cleveland Model B.
3¾" Cleveland Model A.
2¼" Cleveland Model A.
No. 20, ⅝"—⅞" Cleveland Model B.
No. 6 Warner & Swasey.
No. 6 Foster.
24" Gisholt, complete equipment.
18" Gisholt, complete equipment.

Lathes

48"x21' Pond, triple grd., motor drive.
44"x45' Putnam, triple grd., motor dr.
40"x14' Alliance Geared Head.
32"x12' No. 3 Pittsb'gh, q.c., h.d., c.dr.
30"x16' Reed, cone drive.
30"x28' Pond, triple grd., motor drive.
24"x16' Whitcomb-Blaisdell, cone dr.
20"x14' Reed, plain change, cone dr.
21"x10' Boye & E., qk. ch., cone dr.
20"x10' Hendey Yoke Head.
14"x 6' Hendey, t. a., qk. ch. collets.
14"x 6' Hendey, t. a., draw-in attachment, reliev. attachment.

Drills

6' Niles Radial.
5' Bickford, t. a., motor drive.
36" Aurora, g. f.
4-spindle Leland-Gifford, ball bearing.
3-spindle Leland-Gifford, ball bearing.
12-spindle Baush Drill.
6-spindle Foote-Burt No. 5 Taper.
No. 2 Colburn, h. p., (New).
No. 25 Foote-Burt.
No. 4 Mueller Radial, s. p.

Milling Machines

No. 4 LeBlond plain.
No. 3 Brown & Sharpe plain.
No. 2 Brown & Sharpe plain.
Gooley & Edlund slab.
12" Cincinnati mfg. type.
84 Pratt & Whitney Thread Miller.
No. 3 U. S. Hand Millers.
No. 2—13B Brown & S., plain.
2 No. 2 Garvin Duplex.
2M—Potter & Johnston.
2A—Milwaukee, s. p. drive, plain.

Miscellaneous

50-ton 60' Span Alliance Crane.
4½" Acme Bolt Cutter.
Hendey Centering.
36" Fellow's Gear Shaper.
18" Gleason Bevel Gear Generator.
4-Spindle Moline No. 1 Hole Hog.
60" Gould & Eberhardt Gear Cutter.
30" Schuchardt & S. Gear Hobber.
3" National Bolt Cutter.
No. 20 Bliss Punch Press.

The EMPIRE MACHINERY EXCHANGE CO., Inc.

***Offices and Warehouses:* 2261 E. 14th St., Cleveland, Ohio**

They've got to be good before we buy 'em

HAMMER, No. 12 Beaudry.
HAMMER, 200 lb. Bradley Helve.
LATHE—Crankshaft, 27" x 10' American Heavy Duty.
MILLER—Vertical, No. 3 Cincinnati, single pulley drive.
PRESS—Plain, Solid back, P-1 Ferracute.
PRESS—Plain, O. B. I., No. 19 Bliss.
PRESS—Geared, O. B. I., No. 4 R. & K.
PUNCH, S. E., 48" throat, Rock River, cap. 1 3/16"x1".

THE E. L. ESSLEY · MACHINERY · CO

551 W. Washington Blvd., Chicago. 78-80 W. Water St., Milwaukee

SPECIALS

Brown & Sharpe Millers—No. 3 Vertical; No. 3 Universal, with vertical attachment; Nos. 2-B and 3-B Plain, single pulley drive.
Model AB Becker Vertical, $375.
Cincinnati Planers, 1—32"x32"x10'; 1—24"x24"x8'.
Gray Planers; 1—30"x30"x16'; 1—24"x24"x6'.
Cisco Lathes; 2—16"x8', q. c.; one 1—16"x6', q. c.
Mueller Lathes—18"x8' and 18"x6', q. c.
New Britain Automatic, 6 spindle, 1 1/8"x7".
Detrick & Harvey Open Side Planers, 1—24"x24"x6'; 1—48"x16'.
24"x14' Schumacher & Boye Q. C. Lathes.
24"x12' Lodge & Shipley Q. C. Lathe, patent c. s.
2—26 3/4"x16' Bridgeford Lathes, with taper.
26"x8" Pittsburgh Lathe, q. c., taper, 3 step, d. b. g.
Norton Cylinder Grinder, 18"x36", $1000.
48"x28' Niles Triple Geared Lathe, $1550.
46"x18' New Haven Triple Geared Lathe, raised to 62", $1300.
6' Niles Universal Radial, with motor, $1050.
42" Bullard Boring Mill, 2 heads, $1450.
Style A Long & A. Punch and Shear, 24"x1", with arch. jaw, $750.
Shapers—24" Gould & Eberhardt; 16" Steptoe; 15" Kelly.
Lucas Forcing Press, 50-ton cap. | Bliss Presses, Nos. 18 and 20.
Morse Grinder, 6"x30". | No. 5 Toledo Inc. Press, $425.

More than 300 other Machines in Stock. Low Prices.

Norton-Broadway Machinery Co., Cincinnati, Ohio

PLANERS

Niles - Bement - Pond latest electric reversing drive, four heads, box type tables, some with all steel gearing, rapid traverse, some brand new. All guaranteed. Complete in every way.

36" x 36" x 14'	42" x 42" x 30'
36" x 36" x 16'	48" x 48" x 16'
36" x 36" x 26'	50" x 36" x 22'
42" x 42" x 26'	54" x 54" x 22'

NEW LATHES: Niles-Bement-Pond, 36"x16' heavy duty, quick change, screw cutting, triple geared, belt drive, at big reduction.

MILLING MACHINES: No. 3-B Heavy Brown & Sharpe plain, all geared head, motor drive, with motor.

No. 2-B Heavy Brown & Sharpe plain, all geared head, motor drive, with motor.

GEAR CUTTERS: (2) No. 4 Brown & Sharpe Automatic Gear Cutters, for spur gears.

BORING MILL: 60" Baush, heavy quick change, geared feeds, table 54" diam., 8" thick, D. C. motor drive, with push button starter.

LOCOMOTIVE CRANE: 15-ton Brown Hoist, 50' boom, with 42" magnet and generator.

For prices and detailed description, write either

A. F. STRAFER *or* N. C. FAILOR, Inc.

30 Church Street, NEW YORK — **30 Church Street, NEW YORK**

Planer Bargain

42"x42"x16' Cleveland Open Side Planer, excellent condition, three heads, arranged for motor drive.

PRICE, $4,250

H. A. Smith Machinery Co.

Syracuse, New York

GOOD USED TOOLS

DRILLS

20" All Geared.
24" All Geared.
24" Baker heavy.
20" Barnes.
24" Prentice Sliding Head.
26" Barnes Sliding Head.
28" Sibley Sliding Head.
36" Snyder Sliding Head.

RADIALS

3' American Sensitive.
2' American swing table.
6' Gang plain.

MULTIPLE DRILLS

3 Spindle Cincinnati plain bearing.
4 Spindle Barr.
2 Spindle Cincinnati B. B.
2 Spindle Avey Bench.
No. 61B Harrington 24 Spindle.

LATHES

17x 8 Sidney.
18x 8 Greaves & Klusman.
18x 8 Hamilton.
18x12 Hamilton.
24x12 Bradford.
25x14 LeBlond.
30x14 LeBlond.
32x14 Wickes.

HORIZONTAL BORING MACHINES

Universal 2½" bar.
Lucas 3" bar.
Rockford No. 2.

FOX LATHES

No. 2 W. & S. Friction Head.
No. 3 W. & S. Friction Head.

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DRILLS—Upright and Radial

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1—Colburn No. 4.
1—P. & W. No. 1 gun barrel.
2—New Turner No. 3, vert. tur.
2—Baker No. 110.
1—American No. 4.
1—Baush 6' Radial.
1—N.-B.-P. 96" Ridgeway, motor drive, plain Radial.

DRILLS—Multiple Spindle

1—Natco No. 14, rect. head.
2—Baush No. 3, 21 spindle.
1—New Baush No. 4, 56 spdl.
2—Baush No. 2, 24 spindle.
1—New Avey No. 2½,4-sp.hi. sp.
3—Pratt & W. No. 11, round hd.
1—Moline, 4-spindle.
1—Foote-Burt No. 17, 6-spdl.

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16—B. & S. Nos. 0, 2 & 6 full auto.
14—Gridley 4-spindle, ¾", 1¼", 1¾", 7/16", 2⅝".
2—Gridley 4¼" 3¼" S. S.
2—Cleveland 1¼" Model B.
8—Cleveland ⅞, 1¼, 2¼", A.
1—Cleveland 7⅛" A.
1—New Britain 1x5 bar.
10—New Britain Nos. 23, 24, 33.

MILLING MACHINES

9—Van Norman No. ½ Duplex.
1—Newton Duplex.
1—Cincinnati 48" Duplex.
1—Brown & Sharpe No. 3 univ.
2—Hendey No. 1 universal.
2—Rockford Nos. 1½ & No. 2.
4—Cincinnati Nos. 2, 3 and 4 pl., cone drive.
4—B & S Nos. 2, 2B, 3B and 4 pl.
1—B. & S. No. 13-B Plain.
1—Cincinnati No. 3 vertical.
1—Milwaukee No. 1½-B vert.
2—Taylor & Fenn vertical.
12—Becker Nos. 3H, 4B, AB, 5C, C vertical.

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4—Lees-Bradner Nos. 6, 8.
25—P. & W. No. 5 auto.
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LATHES

1—Lodge & S. 30"x16', grd. hd.
3—Putnam 42"x44', grd. hd., dbl. carriage, arr. motor drive.
3—Bridgeford 48x50, grd. head, dbl. carriage, arr. motor drive.
1—Niles-B.-P. 72x74 forge turning and boring lathe, 2 carriages, arrange motor drive.

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15—Barber-Colman Nos. 3 & 12.
4—Hercules 8".
7—Brown & S. 3x36; 3x26; 4x36.
3—G. & E. No. 18-H.
2—G. & E. No. 36-ST, 3 and 4-spindle Gear Roughers.
1—G. & E. 34" Combined Spur and Bevel Gear Cutter.
20—Fellows Nos. 61, 6 & 615.
20—Gleason bevel, 6", 11" & 18".
1—Lees-Bradner No. 5A gear generator.

PLANERS

7—Putnam 26x26x8', 2 heads.
1—W. & P. 24x24x10'.
2—Gray 38x38x20, 3 hds., mtr. dr.
1—Putnam 48x48x12', 2 heads.

GRINDERS

1—Queen City 14x72 plain.
7—Norton 6x32, 10x36, 16x36.
1—Springfield 12x12x48 vert.
4—Cincinnati No. 2, 12x36.
1—Diamond 84" Guide Bar.
1—Landis 18x68 crank.
1—Fitchburg 12x54.
12—Bryant Nos. 20 & 6 chucking.
2—Bryant No. 15 double spindle.
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1—Van Norman No. 34.

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1" 8-spindle National vertical semi-automatic Tapper.
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No. 19, 53" Besly Vertical Spindle Disc Grinder.
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No 3 Wilmarth & Morman Surface Grinder, with magnetic chuck.
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No. 0 Brown & Sharpe Hand Turret.
No. 1 Brown & Sharpe Hand Turret.
No. 19 Bliss Press.
No. 20 Bliss Press.
No. 21 Bliss Press.
No. 2 V. & O. Press.
No. 2½ Toledo Press.
No. 2 Brown & Sharpe Surface Grinder.
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16" Milwaukee Shaper.
20" Gould & Eberhardt Shaper.
20" Milwaukee Shaper.
20"x8' American Geared Head Lathe.
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1—24x 8 Cincinnati, gear box.
2—24x 8 Whitcomb, second belt.
4—24x10 Whitcomb second belt.
1—24x12 American, 2 heads.
1—28x 6 Gray, spur geared.
5—30x30x12 N.-B.-P., reversing motor drive, with control panel.
1—30x18 Cincinnati, Tu-Speed.
2—36x36x10 N.-B.-P., reversing motor drive, with control panel.
1—36x12 N.-B.-P., 4 heads.
1—36x16 N.-B.-P., 4 heads.
1—36x18 N.-B.-P., 4 heads.
1—36x36x12 Cincinnati, 4 hds., m. d.
1—36x12 Detrick Harvey.
1—36x14 Niles, gear box.
1—42x42x26 Pond, reversing motor drive, with control panel.
1—60x12 Gleason, 1 head.
1—60x14 Powell extra heavy.
1—60x60x22 Pond, reversing motor drive, with control panel.
1—60x60x24 Detrick Harvey.

Turret Lathes

6—18" Libby Hi-Power.
1—No. 22 Garvin Monitor.
1—No. 2½ Garvin, G. F. H.
2—No. 4 Warner Swasey.
1—No. 3 Forster, G. F. H.
1—No. 3 Warner Swasey.
2—No. 4 Millholland.
9—2"x26" P. & W.
2—2¼"x11" Acme.
2—2½"x26" P. & W.
1—24" Gisholt, big bore.
6—3x36 J. & L.
1—32"x24' Gisholt, M. D.

Lathes

3—30"x11' American Geared Head, arranged motor drive.
2—30"x13' American ditto.
1—42"x18' Geared Head N-B-Pond.
1—26"x16' Prentice Geared Head.

Lathes—Continued

1—24"x12' Greaves-Klusman.
1—18"x16' Cincinnati, Q. C. G.
1—18"x36" Fay-Scott Gap.
1—16"x 8' Hendey Tool Room.

Automatics

2—No. 00 B. & S. turret forming.
1—No. 00G B. & S. screw.
1—No. 0 B. & S. Cut-off.
3—No. 0 B. & S. screw.
5—¾" Gridley multiple.
5—2½" Gridley, single.
4—3½" Gridley, single.
3—4½" Gridley, single.
1—¾" Cleveland, single.
2—2" Cleveland, Model A.
1—2½" Cleveland, Model A.
1—1¼"x7" New Britain, bar.
1—6 hole Detroit Drill.

Shapers

1—6" P. & W., vertical.
1—14" P. & W., crank.
1—15" Hendey, pillar.
1—16" Smith Mills, d. b. g.
1—16" Whipp, 4-step cone.
1—16" American, motor drive.
1—20" Kelly, 4-step cone.
1—20" Smith Mills, 4-step cone.
1—20" Ohio heavy duty.
2—24" G. & E., extension base.
3—24" Cincinnati, b. g.
1—28" Queen City, cone drive.
1—32" Smith Mills, gear box.

Radial Drills

1—24" Mueller, rd. column.
1—28" American high speed.
1—42" C. O., wall type.
1—48" Columbia, rd. column.
1—60" Niles semi universal.
1—60" American, motor drive.
1—72" Cincinnati, Bickford.
1—72" Bickford, Universal.
1—72" Niles, Universal.
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1—No. D201 Ferracute, 200 tons.
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1—No. 63 V. & O.
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1—No. 202A Toledo, overh'g. fly.
1—No. 92B Toledo, geared.
1—No. 40A Williams & W., new, grd., bed 40x33, wt. 30000 lbs.
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10x36 Norton Plain.
10x50 Norton Plain.
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1¼" Acme B. G., Friction Head.
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10' 10 ga. Cap. L. & N. Pwr. Sh.
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30"x16' LeBlond h. d., q. c. g.
24"x12' American, q. c. g.
24"x 8' LeBlond, q. c. g.
20"x10' Davis, q. c. g.

PLANERS

60"x60"x18' Pond 2-heads.
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10—21"x10' LeBlond.
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5—20"x12' American.
5—20"x 8' LeBlond.

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4—No. 4 Cincinnati Plain.
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9—No. 3 Kempsmith Plain.
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1—No. 2 Kempsmith Plain.

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1—24"x24"x 6' American.

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1—52" Gisholt.
1—42" Gisholt.
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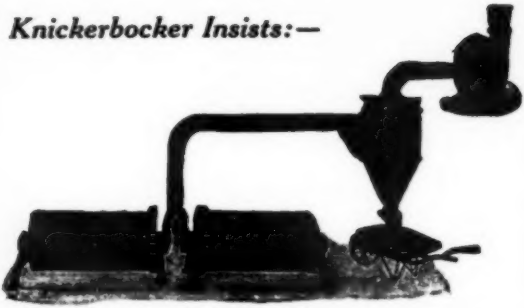

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Drilling Machine Heads, Multiple
Gaterman Mfg. Co., W., Manitowoc, Wis.
United States Drill Head Co., Cincinnati

Drilling Machines, Bench
Ames Co., B. C., Waltham, Mass.
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Gaterman Mfg. Co., W., Manitowoc, Wis.
Merit Oil Equipment Co., Cleveland, O.
Sigourney Tool Co., Hartford, Conn.
Winterhoff Tool & Machine Co., Elkhart, Ind.
Taylor & Fenn Co., Hartford, Conn.

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Drilling Machines, Flexible Shaft
Blax Flexible Shaft Co., 136 Liberty Street, New York

Drilling Machines, Horizontal
Gaterman Mfg. Co., W., Manitowoc, Wis.

Drilling Machines, Multiple Spindle
Avey Drilling Machine Co., Cincinnati
Foote-Burt Co., Cleveland, O.
Foedick Machine Tool Co., Cincinnati, O.
Gaterman Mfg. Co., W., Manitowoc, Wis.
Merit Oil Equipment Co., Cleveland, O.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Portable Electric
Cincinnati Electrical Tool Co., Cincinnati, O.
Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N.A., 5001 N. Lincoln St., Chicago
Winterhoff Tool & Machine Co., Elkhart, Ind.
Wisconsin Electric Co., Racine, Wis.

Drilling Machines, Post
Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Drilling Machines, Radial
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Foedick Machine Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Sensitive
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
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Taylor & Fenn Co., Hartford, Conn.
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Drilling Machines, Vertical
Avey Drilling Machine Co., Cincinnati
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
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Foedick Machine Tool Co., Cincinnati, O.
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Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

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Knickerbocker Co., Jackson, Mich.

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Precision Truing Machine & Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.
Western Tool & Mfg. Co., Springfield, O.

Feeders, Oil and Soda Water
New Britain Machine Co., New Britain, Conn.

Filing Machines, Die
Ames Co., B. C., Waltham, Mass.

Filing Room Equipment
Wardwell Mfg. Co., Cleveland, O.

Flexible Shafts
Blax Flexible Shaft Co., 136 Liberty Street, New York
Strand Co., N.A., 5001 N. Lincoln St., Chicago

Forges
Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Forgings, Hollow Bored
American Hollow Boring Co., Erie, Pa.

Furniture, Machine Shop
New Britain Machine Co., New Britain, Conn.
Western Tool & Mfg. Co., Springfield, O.

Gauges, Dial
Ames Co., B. C., Waltham, Mass.
Federal Products Corp'n, Providence, R. I.

Gauges, Piston and Piston Ring
Federal Products Corp'n, Providence, R. I.

Gauges, Thread
Federal Products Corp'n, Providence, R. I.

Gears
Boston Gear Works Sales Company, Norfolk Downs, Mass.

Grinding Machines, Belt
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Peerless Surfacing Machine Co., Troy, N. Y.

Grinding Machines, Bench
Bodine Electric Co., 2256 W. Ohio St., Chgo.
Gallmeyer & Livingston Co., Grand Rapids, Mich.

Grinding Machines, Cutter, Reamer and Tool
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Jarecki Mchc. & T. Co., Grand Rapids, Mich.
Landis Tool Co., Waynesboro, Pa.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Thompson Grinder Co., Springfield, Ohio

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Jarecki Mchc. & T. Co., Grand Rapids, Mich.
Landis Tool Co., Waynesboro, Pa.
Thompson Grinder Co., Springfield, Ohio

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Gallmeyer & Livingston Co., Grand Rapids, Mich.
Jarecki Mchc. & T. Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Disc
Gallmeyer & Livingston Co., Grand Rapids, Mich.
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La Salle Tool Co., La Salle, Ill.

Grinding Machines, Face
Taylor & Fenn Co., Hartford, Conn.

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Blax Flexible Shaft Co., 136 Liberty Street, New York

Grinding Machines, Internal
Landis Tool Co., Waynesboro, Pa.
Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio

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Bodine Electric Co., 2256 W. Ohio St., Chgo.
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Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago
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Gallmeyer & Livingston Co., Grand Rapids, Mich.
Jarecki Mchc. & T. Co., Grand Rapids, Mich.

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Gallmeyer & Livingston Co., Grand Rapids, Mich.
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Landis Tool Co., Waynesboro, Pa.
Thompson Grinder Co., Springfield, Ohio

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Peerless Machine Co., Racine, Wis.

Hack Saw Machines
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago

Peerless Machine Co., Racine, Wis.
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Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago

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Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago

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Chattanooga Mchy. Co., Chattanooga, Tenn.
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National Machine Tool Co., Cincinnati

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Blax Flexible Shaft Co., 136 Liberty Street, New York

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Danly Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

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Screws
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Bath & Co., Cyril J., Cleveland, O.
Bennett Mchy. Co., 50 Church St., New York
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Midland Equipment Co., 612 W. Van Buren Street, Chicago
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Scott-Hanebach Mchy. Co., 130 S. Clinton Street, Chicago
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Stocker-Rumely-Wache Co., 117 N. Jefferson St., Chicago
Stoehr Mchy. Co., A. M., 560 W. Adams St., Chicago
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Strong, Carlisle & Hammond Co., Cleveland
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Wertman, M. A., Cleveland, O.
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Shafts, Steel
American Hollow Boring Co., Erie, Pa.

Shaping Machines
Osborne & Sexton Machy. Co., Columbus, O.
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Smith & Mills Co., Cincinnati
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For Precision and Production

No. 2 Automatic Surface Grinder

Grinds Work 20" Long, 6" Wide and 10" High With 7" Wheel

Table travels automatically in both directions. A hand-power table movement can be operated without changing automatic feed.

Also has automatic cross feed in either direction with automatic stop. Wheel truing device is built integral with machine. Price, $550. F. O. B. La Salle, Ill.

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La Salle, Illinois, U. S. A.

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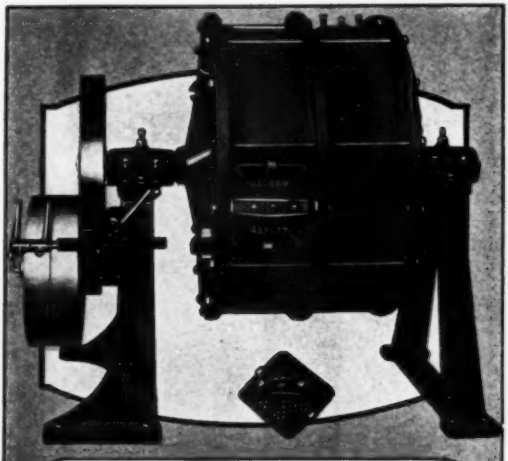

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